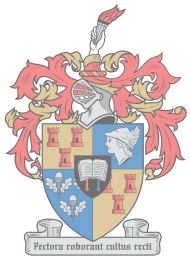
The influence of self-efficacy and perceived organisational support on idea implementation

Rikus Grobler



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Declaration

By submitting this dissertation electronically, I, Rikus Grobler, declare that the entirety of the work contained therein is my own, original work, that I am the sole author thereof (save to the extent explicitly otherwise stated), that reproduction and publication thereof by Stellenbosch University will not infringe any third party rights and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

R. Grobler March 2018

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Abstract

The successful exploitation of new ideas is crucial to organisations. Through the ability to generate and implement useful new ideas, organisations can improve processes, bring new and improved products and services to market, increase efficiencies, improve profitability and generate sustainable competitive advantage.

Every person has the potential to generate worthwhile ideas and employees inevitably have potentially useful ideas about possible improvements in their workplace. However, ideas have to be implemented to exploit their value, and only when a useful idea is ultimately implemented, effecting change and realising benefits for the organisation, is it regarded as innovation. Therefore, for the organisation that wants to become more innovative, the challenge for management is to determine how to successfully and consistently translate the potentially useful ideas of employees into innovative action and results.

A person can come up with an idea on their own, but implementation of an idea takes place in the realism of the organisation. Thus, individual-level factors and organisational-level factors play a role in idea implementation by employees in organisations, and consequently two key constructs were selected for this study, namely self-efficacy (S-E) as an individual-level factor; and perceived organisational support (POS) as an organisational-level factor.

Accordingly, the objectives of this study were based on investigating the influence of S-E and POS and associated variables on idea implementation by employees in an organisation.

The study used a mixed method research strategy. Initially a qualitative approach was taken to generate data through the lenses of S-E and POS on people who were successful at implementing ideas in their respective organisations. Analysis of this data led to the discovery of certain behaviours which were postulated to influence idea implementation in an organisation. These behaviours were then formulated as variables which were subsequently incorporated in a quantitative approach to determine the extent of their effects in numbers.

The quantitative phase involved a multi-factor experiment where data was collected through a personally administered questionnaire. The different factors that were postulated to influence idea implementation were manipulated through the experimental vignette methodology (EVM). The EVM involved the presentation of a simulated scenario to a participant implicating a situation where a useful idea could be implemented by the participant, and participants were then asked to make a judgement on the chance of successfully implementing the idea.

The empirical results of the study confirmed that S-E and POS are positively related to idea implementation by employees in an organisation, and further indicated which behaviours improve the chances of ideas being implemented successfully.

Other conclusions drawn from the interpretation of the results are that at the organisational level, simple, unpretentious acts of support from managers, such as genuinely listening to a person's idea and displaying confidence in a person's abilities to implement an idea, have a positive influence on idea implementation; and, at the individual level, improvement of employees' interpersonal communication competence and encouragement of employees' inquisitiveness could also improve individual innovative behaviour.

The simultaneous investigation of individual-level factors and organisational-level factors which lead to the identification of specific managerial behaviours and individual traits that could improve the chances of successful idea implementation by employees, is a significant contribution of this study. In addition, a contribution is also made by the study's utilisation of the experimental vignette methodology in the field of innovation.

Key words: self-efficacy, perceived organisational support, innovation, idea implementation.

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List of acronyms and abbreviations

ANCOVA	analysis of covariance
ANOVA	analysis of variance
CI	confidence interval
COSII	chance of successfully implementing idea
DCSM	demand-control-support (model)
DESC	Departmental Ethics Screening Committee
EVM	experimental vignette methodology
GFI	goodness-of-fit index
HRM	Human Resource Management
ICC	interpersonal communication competence
ICCI	Interpersonal Communication Competence Inventory
IIB	individual innovative behaviour
ISE	innovation self-efficacy
MPS	Managerial Practices Survey
OB	organisational behaviour
OCB	organisational citizenship behaviour
OST	Organizational Support Theory
POS	perceived organisational support
QDA	qualitative data analysis
R & D	Research and Development
RBV	resource-based view
RMSEA	root mean square error of approximation
SCM	Success Case Method
SDT	self-determination theory
S-E	self-efficacy
SEM	structural equation modelling
SES	Self-Efficacy Scale

SMEs	small-to-medium enterprises
SPOS	Survey of Perceived Organizational Support
US	University of Stellenbosch
USB	University of Stellenbosch Business School
VC	venture capitalist
WTR	willingness to take risk

CHAPTER 1
INTRODUCTION

1.1 BACKGROUND

"The value of an idea lies in the using of it" – Thomas Edison.

The successful exploitation of new ideas is crucial to organisations. Through the ability to generate and implement useful new ideas, organisations can improve processes, bring new and improved products and services to market, increase efficiencies, improve profitability and generate sustainable competitive advantage (Amabile, 1988: 126; Sternberg & Lubart, 1996: 678; Mumford, 2000: 313; Rothberg, 2004: 1060; Rothberg, 2005: 476; Flynn, Dooley, O'Sullivan & Cormican, 2003: 417).

An authority on creativity, Amabile (1983: 360), defined the generation of a creative idea ("creativity") as being: "…(a) both a novel and appropriate, useful, correct, or valuable response to the task at hand and (b) the task is heuristic rather than algorithmic" (Amabile, 1983: 360). Amabile (1983: 361) further proposed that it is at least theoretically possible for anyone with normal cognitive abilities to be creative to some degree in some domain of endeavour. Thus, it is reasoned that employees inevitably have ideas about possible improvements in their workplace (Schaffer & Paul-Chowdhury, 2002: 1; Rothberg, 2004: 1060; De Jong & Den Hartog, 2007: 41).

However, "ideas are useless unless used" (Levitt, 1963: 79), and thus ideas have to be implemented to exploit their value. When a useful idea is successfully implemented, effecting change and realising benefits for the organisation, it is regarded as innovation (West & Farr, 1989: 16; Damanpour, 1991: 556; Woodman, Sawyer & Griffin, 1993: 293; Janssen, Van de Vliert & West, 2004: 130; De Jong & Den Hartog, 2010: 23; Linton, 2002: 65; Rothberg, 2004: 1060, Voss, 1992: 30).

Therefore, for the organisation to become more innovative, the challenge for management is to determine how to successfully and consistently translate the useful ideas of employees into innovative action and results (Schaffer & Paul-Chowdhury, 2002: 1; Levitt, 1963: 79).

1.1.1 Value and importance of innovation

Innovation has become quite a maxim in the present business environment and has received increasing interest in the academic world over the last three decades.

In a state-of-the-science review on innovation, Anderson, Potočnik and Zhou (2014: 1298) confirmed a trend of exponential growth in the number of articles published on creativity and innovation over the last two decades, as shown in Figure 1.1 below.

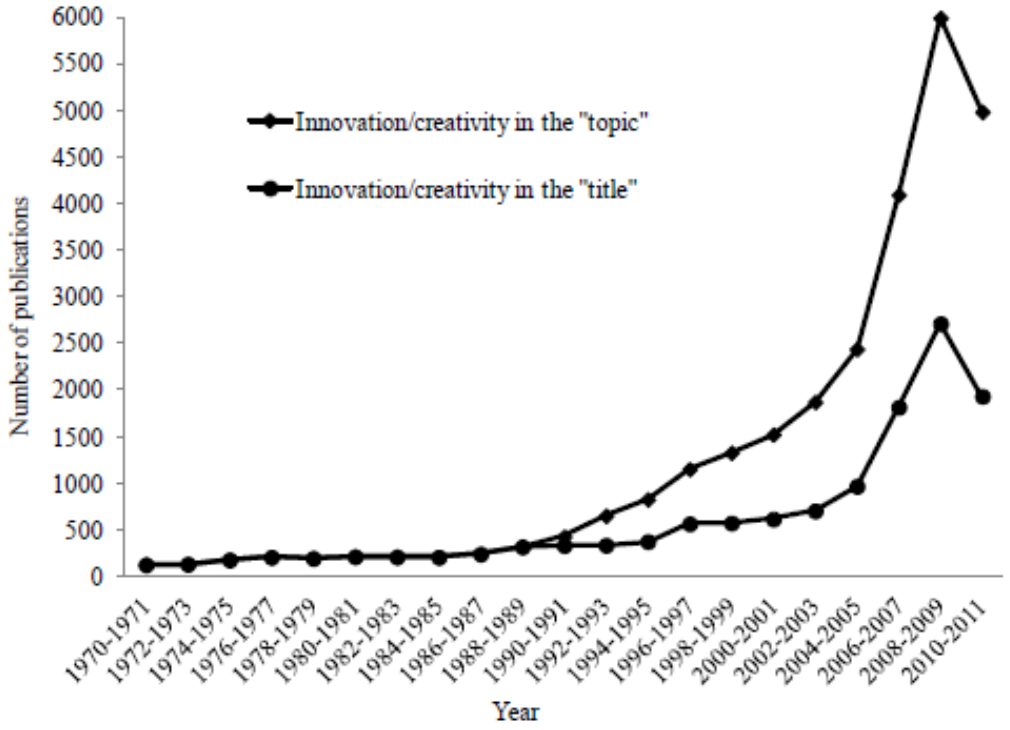

Figure 1.1: Growth in published papers in the wider field of creativity and innovation

Source: Anderson *et al*., 2014: 1298.

Researchers and practitioners alike agree that innovation is positioned as a driver of economic growth and it is thought to provide organisations with a means of creating a sustainable competitive advantage that is vital in today's turbulent and challenging economic environment (Tidd, Besant & Pavitt, 2001: 4; West, 2002: 366; Egbu, 2004: 305; Damanpour, Walker & Avellaneda, 2009: 650; Anderson *et al*., 2014: 1298).

The value of innovation is also confirmed in the following findings, as presented in Table 1.1.

Table 1.1: The value of innovation according to the literature

Value of innovation	Reference
Innovation leads to better, more efficient ways of working which create a distinct advantage in a competitive environment.	Monge, Cozzens & Contractor, 1992.
Innovation is associated with economic progress and impact.	Christensen, Raynor & Anthony, 2003; Birkinshaw, Hamel & Mol, 2005; Fagerberg, 2003.
Innovation is seen as a vital component of strategy.	Egbu, 2004; Lawson & Samson, 2001; Ungerer, Pretorius & Herholdt, 2007; Hamel, 2001.
Innovation adds social value.	Egbu, 2004.
Innovation is seen as the solution to improve efficiency and effectiveness to reduce the environmental impact of the systems of production and consumption.	Van Kleef & Roome, 2005; Damanpour & Wischnevsky, 2006.

Value of innovation	Reference
Innovation is a prerequisite for competitive advantage.	Damanpour & Wischnevsky, 2006; Fagerberg, 2003; Lawson & Samson, 2001; Egbu, 2004; Ungerer *et al*., 2007; Voss, 1992.
Innovation is seen as a key driver for organisational and institutional change.	Fagerberg, 2003; Lawson & Samson, 2001; Shaw, O'Loughlin & McFadzean, 2005.
Innovation is seen as a key component of entrepreneurship, which is a driver of wealth creation.	Shaw *et al*., 2005.
Innovation is viewed as the response to environmental challenges or future opportunities.	Shaw *et al*., 2005.

Lawson and Samson (2001: 389) confirmed that the literature indicates a positive correlation between innovation performance and enhanced firm performance; and that innovative firms are more profitable and valued at a premium by the share market as opposed to their less innovative counterparts. Lastly, in a study of Vincent, Bharadwaj and Challagalla (2004: 18), which used meta-analytic methods to synthesize empirical studies that examined the antecedents and outcomes of organisational innovation over a period from 1980 through 2003, the overall findings indicate that innovation is positively related to superior organisational performance.

Thus, from the above arguments and the value of innovation as listed in Table 1.1, it can be concluded that innovation is an important undertaking for organisations that want to improve performance and become more competitive.

1.1.2 Definition of innovation

Many different definitions of innovation exist amongst various disciplines, and the lack of a common definition for innovation challenges comprehension of the concept of innovation (Baregheh, Rowley & Sambrook, 2009: 1324; Crossan & Apaydin, 2010: 1155).

Baregheh *et al*. (2009: 1323) undertook a content analysis of existing definitions of "innovation" as a basis for proposing an integrative definition of organisational innovation, and found the key attributes present in definitions of innovation to be the following, as listed in Table 1.2.

Table 1.2: The key attributes present in the definitions of innovation

Attribute	Meaning
Nature of innovation	Refers to the form of innovation as in something new or improved.
Type of innovation	Refers to the kind of innovation as in the type of output or the result of innovation, e.g. product, service or process.
Stages of innovation	Refer to all the steps taken during an innovation process which usually starts from idea generation and ends with commercialisation.
Social context	Refers to any social entity, system or group of people involved in the innovation process or environmental factors affecting it (e.g. individual, team, organisation, industry, etc.).
Means of innovation	Refers to the necessary resources (e.g. technical, creative, financial) that need to be in place for innovation.
Aim of innovation	Refers to the overall result that an organisation wants to achieve through innovation.

Source: Baregheh *et al*., 2009: 1323.

From the above matrix it can therefore be concluded that the definition of innovation has multiple features to consider.

Baregheh *et al*. (2009: 1333) further concluded that innovation is not a discrete act but rather a multi-stage process that does not follow a linear flow. Baregheh *et al*. (2009: 1334) composed a general definition of innovation with the objective of providing a multidisciplinary definition for a multidisciplinary concept. The definition Baregheh *et al*. (2009: 1334) eventually constructed, is: "Innovation is the multi-stage process whereby organizations transform ideas into new/improved products, services or processes, in order to advance, compete and differentiate themselves successfully in their marketplace". This definition is sufficiently broad to include different types of innovations relating to all parts of an organisation and all aspects of their operations. This definition also supports the conclusions of innovation being a multi-faceted phenomenon and the importance of innovation regarding competitiveness.

Another key element of the definition of innovation in the literature is that innovation is about effecting change, with the aim of providing benefit in some way, e.g. West and Farr (1989: 16) defined innovation as: "…intentional attempts to derive anticipated benefits from some change". Damanpour (1991: 556) referred to the change through innovation as "…a means of changing an organization, whether as a response to changes in its internal or external environment or as a pre-emptive action taken to influence an environment".

Ultimately, the definition of Janssen *et al*. (2004: 130) was deemed most appropriate for this study, because it includes the concepts and constructs that are applied in this study, which are shown to be that:

- innovation processes are multifaceted, include both the generation and implementation of ideas and involve activities which are different from routine behaviour;

- innovation is concerned with change;
- innovation is concerned with the realisation of benefits; and
- innovation happens in a social system in the organisation.

The definition for innovation of Janssen *et al*. (2004: 130) is given as: “Innovation can be defined as the intentional generation, promotion, and realization of new ideas within a work role, group or organization, in order to benefit role performance, the group, or the organization (cf. West & Farr, 1989). According to this definition, individuals and groups undertake innovative activities from the intention to derive anticipated benefits from innovative change. However, innovation processes are by definition unpredictable, controversial, and in competition with alternative courses of actions (Kanter, 1988)”.

1.1.3 Theories of innovation

Theories provide conceptual understanding of things that cannot be determined simplistically: e.g. how societies work, how organisations operate, why people interact in certain ways (Reeves, Albert, Kuper & Hodges, 2008: 631), etc. Theories give researchers different “lenses” through which to look at complicated problems and social issues, focusing their attention on different aspects of the data and providing a framework within which to conduct their analysis (Reeves, Albert, Kuper & Hodges, 2008: 631).

It was argued above that the lack of a common definition within the field of innovation, challenges comprehension of the concept. Furthermore, concerning comprehension of the workings of innovation, the lack of a coherent and explicit theoretical base also still prevails (Downs & Mohr, 1976: 701; Wolfe, 1994: 405; Gopalakrishnan & Damanpour, 1997: 19, Anderson *et al*., 2014: 1302; Crossan & Apaydin, 2010: 1164).

To explore the theoretical basis through which innovation has been studied, Crossan and Apaydin (2010: 1164) conducted a systematic review of the literature on innovation and found that the most commonly used theories in empirical studies concerning innovation were learning and knowledge management theories, followed by network theories and economic theories. Institutional theory, the resource-based view (RBV) and adaptation theories were also used. Crossan and Apaydin (2010: 1162) further found that at the organisational level, the RBV and adaptation theories were most common, while psychological theories were quite appropriately applied at the individual level.

In accordance with the intention of Crossan and Apaydin (2010) to explore the theoretical basis through which innovation has been studied, Anderson *et al.* (2014: 1299) found six influential theoretical perspectives and models which could be discerned across the creativity and innovation literatures. A summary of the findings of Anderson *et al.* (2014) is given below in Table 1.3.

Table 1.3: Main theoretical frameworks, factors implicated, and example publications

Theory	Level-of-analysis	Factors implicated in innovation	Example publications
Componential Theory of Organisational Creativity and Innovation (Amabile, 1997)	Individual/Team	Expertise, creativity skills, task motivation (intrinsic), work group support.	Choi, Anderson & Veillette (2009); Hirst, Van Knippenberg & Zhou (2009); Jung, Wu & Chow (2008).
	Organisation	Organisational and supervisory encouragement, resources, challenging work, freedom, workload pressure, organisational impediments.	
Interactionist Theory of Organisational Creativity (Woodman *et al*., 1993)	Individual	Personality, cognitive abilities/style, intrinsic motivation, knowledge.	Perry-Smith (2006); Shalley, Gilson & Blum (2009); Yuan & Woodman (2010).
	Group	Norms, cohesiveness, size, diversity, roles, task, problem-solving strategies.	
	Organisation	Culture, resources, rewards, strategy, structure, technology.	
Theory of Individual Creative Action (Ford, 1996)	Individual	Goals, communication networks, reward systems, resources, tolerance of ambiguity, self-confidence, creative self-image, emotions, expertise, creative abilities.	Janssen (2005); Unsworth & Clegg (2010).
Model of Paternalistic Organizational Control and Innovation and Group Creativity (Zhou, 2006)	Team	Paternalistic organisational control, intrinsic motivation, national culture.	None
Theory of Team Climate for Innovation (West, 1990)	Team	Vision, task orientation, participative safety, support for innovation.	Hülsheger, Anderson & Salagado (2009); Fay, Borrill, Amir, Haward & West (2006); King, De Chermont, West, Dawson & Hebl (2007); Pirola-Merlo & Mann (2004).
Ambidexterity theory (Bledow, Frese, Anderson, Erez & Farr, 2009a; 2009b)	Individual	Alternating between different mindsets and action sets based on domain-relevant expertise.	Rosing, Frese & Bausch (2011).
	Team	Maintaining and benefiting from the diversity, while at the same time integrating this diversity toward common goals; having ambidextrous leader.	
	Organisation	Separating between exploration and exploitation at the top management level; implementing organisational values and practices to manage conflicting demands.	

Source: Anderson *et al*., 2014: 1299.

Two of the theories mentioned by Anderson *et al*. (2014: 1299) were particularly relevant for this study. Firstly, the *Componential Theory of Organizational Creativity and Innovation* (Anderson *et al*., 2014: 1299), which is based on the premise that work environments have an impact on innovation by affecting components that contribute to innovation. The componential theory supports the view that the wider work environment influences innovation (e.g. culture, climate, resources, managerial practices, etc.).

Secondly, the *Interactionist Perspective of Organizational Creativity* (Woodman *et al*., 1993; Anderson *et al*., 2014: 1300), which stresses that innovation is a complex interaction between the individual and their work situation at different levels of the organisation. Anderson *et al*. (2014: 1300) confirmed that this theory has been one of the most frequently used conceptual frameworks in emphasising the interactions between the contextual and individual factors that might enhance or inhibit innovation at work.

1.1.4 Previous research on innovation

Some of the challenges concerning the research literature on innovation comprise the inconsistency in the terminology used, as well as the fact that there is not one explicit universal taxonomy for innovation. Innovation is a broad term with multiple meanings across different fields; it draws on theories from a variety of disciplines and has been studied using a wide range of research methodologies. Studying innovation is further complicated by multiple levels of analysis and dimensions, and inconsistent operationalisation of the primary constructs. All of these factors have contributed to some extent to mixed and inconsistent empirical results, a view shared by many researchers (Wolfe, 1994; Fagerberg, 2003; Van der Panne, Van Beers & Kleinknecht, 2003; Damanpour & Wischnevsky, 2006; Corso & Pellegrini, 2007; Crossan & Apaydin, 2010).

Four prominent state-of-the-science reviews and meta-analyses on research on innovation (Wolfe, 1994; Anderson, De Dreu & Nijstad, 2004; Crossan & Apaydin, 2010; Anderson *et al*., 2014) revealed the following main elements which consitently featured in previous research on innovation, as provided in Figure 1.2 below.

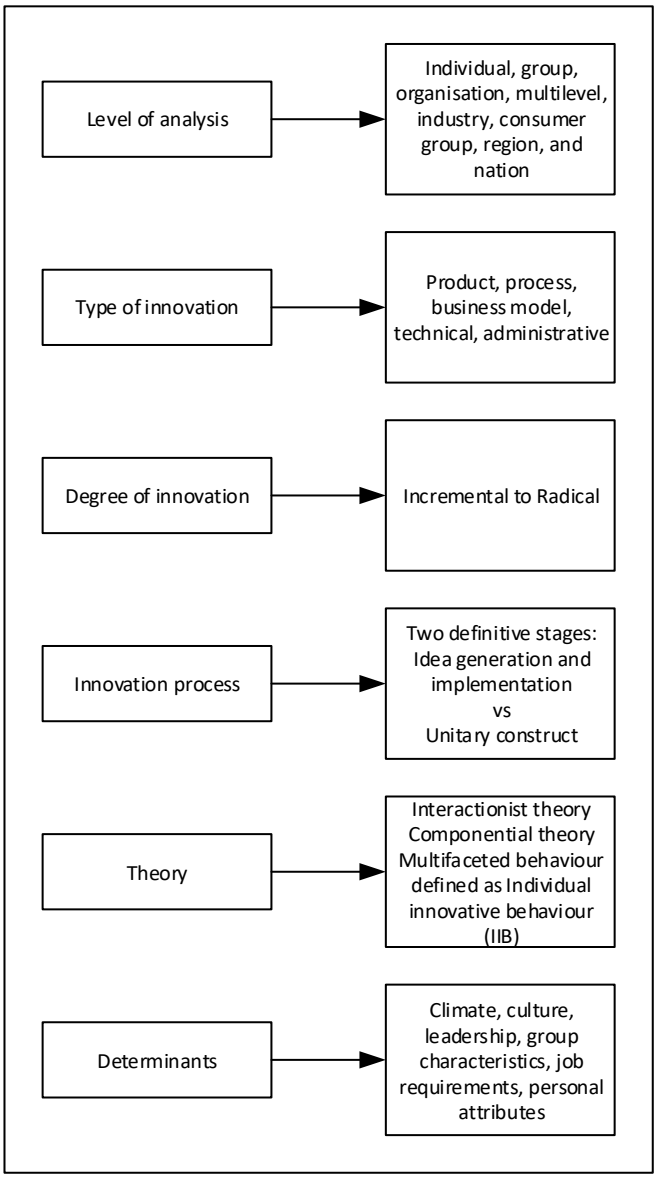

Figure 1.2: Main elements of innovation that have been studied

Source: Adapted from Wolfe, 1994; Anderson, De Dreu & Nijstad, 2004; Crossan & Apaydin, 2010; Anderson *et al*., 2014.

Although the meta-analyses that were reviewed demonstrated some similarities, it was evident that they did not have a consensus view on classifying innovation, i.e. displaying different configurations and explanations concerning the level of analysis, type of innovation, degree of innovation, innovation process and innovation theories.

1.1.5 Level of analysis and innovation process

As indicated above, two of the elements which feature prominently in innovation-related research, are the level of analysis and the innovation process (Wolfe, 1994; Anderson *et al*., 2004; Crossan & Apaydin, 2010; Anderson *et al*., 2014). These two elements were significant for this study, since the viewpoints taken in this study were firstly, that the individual is the source of innovation;

secondly, that innovation happens in the context of the organisation, and thirdly, that innovation is not a linear process, but rather that it is made up of a cyclical, recursive process of idea generation and implementation. The reasons for these perspectives are argued in more detail in the literature review, and only a short summary is given here of the main arguments for these perspectives.

1.1.5.1 Level of analysis

The most prominent level of analysis in innovation-related research are the individual-, workgroup- and organisation levels (Anderson *et al*., 2014: 1299; Crossan & Apaydin, 2010: 1162).

Other classifications of level of analysis also include, “environmental” (Wolfe, 1994: 406; Lam, 2004: 5); “contextual” (Oldham & Cummings, 1996: 607; Shalley & Gilson, 2004: 33; Johns, 2006: 393) and “process” (Koberg, Detienne & Heppard, 2003: 21; Wolfe, 1994: 407; Anderson *et al*., 2004: 151; Crossan & Apaydin, 2010: 1167).

Tidd (2001: 173) argued that there is unlikely to be “one best way to” manage and organise innovation, as industry- and organisational-specific characteristics are likely to undermine the notion of a “universal formula” for successful innovation.

In accord with Tidd (2001: 173) and recognising that the focus of this study was to gain more insight into how individuals can improve the odds of successfully realising their useful ideas in organisations, an individual perspective and an organisational perspective were taken for this study. This means that the individual is viewed as the source of innovation (individual perspective), and also recognising that the individual will inevitably have to innovate within the context of the organisation (organisational perspective).

The individual perspective is grounded in social psychology (Sawang & Unsworth, 2011: 1004; Woodman *et al*., 1993: 294; Sproull & Hofmeister, 1986: 44; West & Farr, 1989: 15), while the organisational perspective views the structures and functions of an organisation (Oldham & Cummings, 1996: 607; Shalley & Gilson, 2004: 33; Johns, 2006: 393), and the social interactions within an organisation (Woodman *et al*., 1993: 294; Sawang & Unsworth, 2011: 1004; West & Farr, 1989: 15) as the pivotal determinants of innovation (Egbu, 2004: 305).

This approach of taking an individual perspective and an organisational perspective on innovation is aligned with the perspective taken by Anderson *et al*. (2014: 1302), who demanded an explicit approach to innovation research, namely more multilevel designs to explore factors implicated in innovation across multiple levels of analysis (e.g. individual and organisational).

All innovations will possess features that cross the levels of analysis between individuals, work groups, and organisations, and multilevel research is needed to chart these effects and processes (Anderson *et al*., 2004: 161).

Based on the above, it is argued that innovation is a complex phenomenon with cognitive, social and political dimensions that should be understood in particular organisational contexts (Sproull & Hofmeister, 1986: 44; Axtell, Harrington, Holman, Unsworth, Wall *et al.*, 2000: 269; Baer, 2012: 1103; Daniels, Wimalasiri, Cheyne & Story, 2011: 584; Egbu, 2004: 305; Nayak, 2008: 423; Green, Welsh & Dehler, 2003: 421; Kanter, 1988: 186; Oldham & Cummings, 1996: 607; Shalley & Gilson, 2004: 33). Interactional psychology provides a strong theoretical base from which to model complex behavioural phenomena, and the interactionist perspective has great promise for explaining human behaviour in complex social settings (Woodman *et al*., 1993: 294; Sawang & Unsworth, 2011: 1004; Sproull & Hofmeister, 1986: 44; West & Farr, 1989: 15).

All the above arguments lead to the conclusion that although an individual can come up with ideas on their own, in the organisational context, implementing ideas has a social element, in which individuals need to gather feedback on their ideas, involve others in selecting the best ideas, gain support for their ideas and transform their ideas into value (Daniels *et al*., 2011: 584; Axtell *et al*., 2000: 269; Baer, 2012: 1103; Scott & Bruce, 1994: 582; Yuan & Woodman, 2010: 325; Anderson *et al.*, 2014: 1299).

Therefore, for the purpose of this study, the level of analysis was taken as the individual being the source of innovation, while recognising that innovation happens within the social context of the organisation.

1.1.5.2 Innovation process

There are two prevailing views concerning how innovation unfolds in an organisation. The one view regards innovation as consisting of two distinct phases, namely an idea generation phase and an idea implementation phase (Wolfe, 1994: 411; McAdam & McClelland, 2002: 87; Anderson *et al*., 2014: 1298; Büschgens, Bausch & Balkin, 2013: 138; Magadley & Birdi, 2012: 2). The other view regards the innovation process as a unitary concept that unfolds by means of a cyclical, recursive process of idea generation and implementation (Anderson *et al*., 2014: 1299; Bledow *et al*., 2009b: 367; Magadley & Birdi, 2012: 1; Paulus, 2002: 395).

It was evident from the literature that consensus does not exist amongst researchers on the boundaries between the concepts of idea generation, implementation and innovation. On the one hand, some scholars have advocated a stronger conceptual differentiation between generating useful ideas (creativity) and innovation (Axtell *et al*., 2000: 266; McAdam & McClelland, 2002: 87; Anderson *et al*., 2014: 1298; Büschgens *et al*., 2013: 138; Mumford & Gustafson, 1988: 27). Yet, on the other hand, other authors have argued that idea generation does not occur only in the early stages of innovation processes but, rather, they suggest a cyclical, recursive process of idea generation and implementation (Anderson *et al*., 2014: 1299; Bledow *et al*., 2009b: 367; Fagerberg, 2003: 19; Kleysen & Street, 2001: 284; Paulus, 2002: 395).

There is empirical support for the view of innovation as a cyclical, recursive process of idea generation and implementation, with several studies showing that the innovation process as it unfolds over time is "messy, reiterative, and often involves two steps forward for one step backwards plus several side steps" (King, 1992; Van de Ven, Angle & Poole, 1989, cited in Anderson *et al*., 2014: 1299). Bledow *et al*. (2009b: 367) described this "messy" process of innovation as individuals running through ongoing cycles of generating ideas and taking action to implement ideas. According to Bledow *et al*. (2009b: 367), ideas are not only an initial input to action but are also a consequence of action, and by acting, individuals create new situations from which additional ideas can be developed.

In the most recent state-of-the-science review on innovation, Anderson *et al.* (2014: 1317) commented that the subfields of idea generation and idea implementation remain determinedly disconnected from one another and they appeal for these two disparate subfields to become more integrated in future research.

Therefore, though recognising that innovation is made up of idea generation- and idea implementation activities, for the purpose of this study the process of innovation was taken as a unitary concept. This point of view is elaborated in the next section.

1.1.6 Individual innovative behaviour

In terms of the definition, theories and the level of analysis and process views of innovation that have been laid out, it was revealed that innovation transpires across different levels in the organisation; innovation consists of multifaceted behaviours; innovation involves interactions between individuals in the context of the organisation; and these behaviours include actions related to the generation and implementation of ideas.

Based on the argument that the individual is the source of innovation within the context of the organisation, and that innovation is a holistic concept consisting of recursive and reiterative interactions of idea generation and idea implementation activities, "individual innovative behaviour" (IIB) was uncovered in the literature as an appropriate construct of an individual's purposeful intent of implementing a potentially useful idea in the organisation, and thereby effecting innovation. A number of explanations and definitions of IIB were found in the literature.

Kleysen and Street (2001: 284) developed and tested a multi-dimensional measure for IIB and defined IIB as: "Individual actions directed at the generation, introduction and or application of beneficial novelty at any level of the organization".

De Jong and Den Hartog (2010: 23) used the term "Innovative Work Behaviour" and accordingly used the following definition of Farr and Ford (1990, cited in De Jong & Den Hartog, 2010: 24) to describe it: "…an individual's behaviour that aims to achieve the initiation and intentional

introduction (within a work role, group or organization) of new and useful ideas, processes, products or procedures". De Jong and Den Hartog (2010) also specifically pointed out that IIB defers from idea generation (creativity) because it also includes the implementation of ideas and unlike creativity, IIB has an applied component and is explicitly intended to provide an output with some kind of perceived benefit.

Janssen (2000: 288) defined IIB as the intentional creation, introduction and application of new ideas within a work role, group or organisation, in order to benefit role performance, the group or the organisation.

Ramamoorthy, Flood, Slattery and Sardessai (2005: 143) argued that IIB is neither expected of the employees in their formal role as employees, nor does it form an explicit contract between the employees and the organisation. Such behaviours are purely discretionary behaviours, which they referred to as "extra-role behaviours", and are not formally recognised by organisational reward systems.

Based on the definitions and explanations of the above studies, IIB was conceptualised in this study as non-routine, multifaceted behaviour, which comprises purposeful actions aimed at the generation of useful ideas, soliciting support for them, and helping their implementation with the aim of creating some perceived benefit. This conceptualisation of IIB was used as the construct representing the individual who wants to implement a useful idea in the organisation, in lieu of differentiating between the idea generation phase and the idea implementation phase of innovation.

1.1.7 Main constructs

The theories and factors related to idea implementation – operationalised as IIB – were examined through the literature review. Subsequently, the selection of the main constructs for this study (given below) were derived from the following arguments, as explained in Table 1.4 below.

Table 1.4: Arguments supporting the selection of the main constructs

Theme	Explanation
Implementation happens in a social system	It is challenging for individuals to innovate on their own. Individuals can come up with ideas on their own, but most of the time require some assistance from other resources in the organisation to realise their ideas (Axtell *et al*., 2000: 269; Baer, 2012: 1103; Daniels *et al*., 2011: 584). Therefore, the implementation of innovation happens in a social system, i.e. the organisation.
Individual- and organisational factors influence implementation	The patterns of interaction between the individual and the context in which the individual operates (the organisation), represent a complex environment and innovation can be influenced by several factors. Individual-level factors and organisational-level factors co-exist and one does not obviate the other; they overlap and interact with one another. The way in which these variables operate, will either support or inhibit implementation. Therefore, regarding the implementation of potentially useful ideas, individual and organisational factors must both be considered in order to increase implementation potential (Anderson *et al*., 2014: 1302; Anderson *et al*., 2004: 161).
Idea generation and idea implementation in one process	According to Bledow *et al*. (2009b: 369), examining factors that influence innovation in isolation, reproduces the dichotomy of idea generation and implementation as being two different processes that are governed by different approaches. Bledow *et al*. (2009b: 369) proposed a "dialectic approach" to overcome this dichotomy and argued that elements of idea generation are important in implementation and vice versa. Therefore, idea generation and idea implementation are not viewed as separate stages in innovation; rather they are part of the behaviours that make up IIB. These behaviours incorporate a broad set of activities related to the identification of challenges or opportunities, generation of ideas, building support for ideas, soliciting resources and aiding their implementation (Scott & Bruce, 1994: 581; Yuan & Woodman, 2010: 323; Baer, 2012: 1102).

Source: Author's own.

These arguments led the researcher to investigate the factors which influence IIB on an individual level and on an organisational level, leading to the following conclusions, as described in Table 1.5 below.

Table 1.5: Conclusions of factors which influence IIB on an individual level and on an organisational level

Conclusion theme	Explanation
Individual-level factors related to idea implementation	Regarding the individual-level factors related to idea implementation, autonomy and the ability of an individual to gain support and assistance in the organisation to aid implementation surfaced as some of the key factors having an influence on the success of implementing an idea (Axtell *et al*., 2000; Hammond *et al*., 2011; Cadwallader, Jarvis, Bitner & Ostrom, 2010; Baer, 2012; Unsworth & Parker, 2003).
Psychological and cognitive factors	There are also psychological and cognitive factors that play a role in how individuals take action on ideas, and more specifically, personal initiative, motivation, and proactive behaviour have been shown to be positive predictors of idea implementation by individuals (Hammond *et al*., 2011; Cadwallader *et al*., 2010; Unsworth & Parker, 2003; Grant & Ashford, 2008; ; Fuller & Marler, 2009; Bateman & Crant, 1993; Wang & Lin, 2012, Stajkovic & Luthans, 1998; Axtell *et al*., 2000; Tierney & Farmer, 2002; Onyishi & Ogbodo, 2012).
Capability beliefs	Ford (1996: 1121) referred to “capability beliefs” in his influential theory of creative action, and listed a number of references that support the notion that people's expectations regarding their abilities to successfully undertake a specific behaviour facilitates IIB.
Innovation issues are complex	The basic premise of the relationship of “capability beliefs” with innovation, is that since innovation issues are complex, they will be more favourably evaluated by people with high self-perceptions about their ability to manage challenging and unstructured situations (Tabak & Barr, 1996: 389). These “capability beliefs” are contained in the construct of self-efficacy (Bandura, 1982: 122, as introduced by Albert Bandura, 1977).
Self-efficacy (S-E) related to IIB	A number of studies make reference to the positive influence of self-efficacy (S-E) on individual innovation. (e.g. Axtell *et al*., 2000: 266; Tierney & Farmer, 2002: 1138; Kumar & Uzkurt, 2010: 1; Onyishi & Ogbodo, 2012: 2; Hammond *et al*., 2011: 92). However, the construct of S-E has not been studied in depth in the context of IIB in organisations (Gerber, Martin, Kramer, Braunstein & Carberry, 2012: 1). S-E has been empirically investigated in the area of entrepreneurship (Boyd & Vozikis, 1994; Barakat, Boddington & Vyakarnam, 2014; Rutherford & Holt, 2007), and since the nature of entrepreneurship is to proactively produce effective solutions to problems and opportunities (Frese, 2007: 152) – a description which resonates well with the meaning of innovation – the researcher was of the opinion that the relationship between S-E and IIB is worth investigating, and S-E was taken as the other key construct of this study.

Conclusion theme	Explanation
Influence of implementation climate on implementation of ideas	Regarding the organisational-level factors related to idea implementation, the literature on innovation implementation revealed that an organisation's implementation climate is a critical element concerning the implementation of ideas (Klein & Sorra, 1996; Dong, Neufeld & Higgins, 2008; Taylor & McAdam, 2004; Klein, Conn & Sorra, 2001; Sawang & Unsworth, 2011). Concerning the implementation climate, support from managers surfaced as one of the factors with a significant influence on the implementation climate (Angle & Van de Ven, 1989; Beer, 1988; Leonard-Barton & Krauss, 1985; Nadler & Tushman, 1989; Nutt, 1986, all cited in Klein & Sorra, 1996: 1074; Klein & Knight, 2005; Hunter, Bedell & Mumford, 2007; Sawang & Unsworth, 2011).
Support for innovation related to IIB	The construct of support for innovation was also included in the theoretical models of IIB (West & Farr, 1989; Hammond, Neff, Farr, Schwall & Zhao, 2011); and support for innovation was also included as a variable in all the studies that specifically investigated IIB (Scott & Bruce, 1994; Yuan & Woodman, 2010; Baer, 2012). Thus, support for innovation is a key area of the organisational context to consider when trying to increase the success rate of the implementation of employees' ideas, and was selected as one of the key constructs of this study.

Source: Author's own.

The arguments above put forward two main constructs deemed appropriate for the purpose of investigating how employees get their potentially useful ideas successfully implemented in an organisation. These constructs were self-efficacy (S-E) as an individual-level variable; and perceived organisational support (POS), as an organisational-level variable.

Figure 1.3 below provides a conceptual diagram representing where this study fits in the innovation research landscape. To summarise, multiple theories have been applied to investigate innovation, and multiple factors have been identified which influence innovation across different levels of analysis. However, for this study, the focus was on the constructs of S-E (individual level) and POS (organisational level), and specific variables related to these constructs, and their influence on innovation. Additionally, innovation was rendered as IIB, i.e. an individual implementing a useful idea in the context of the organisation.

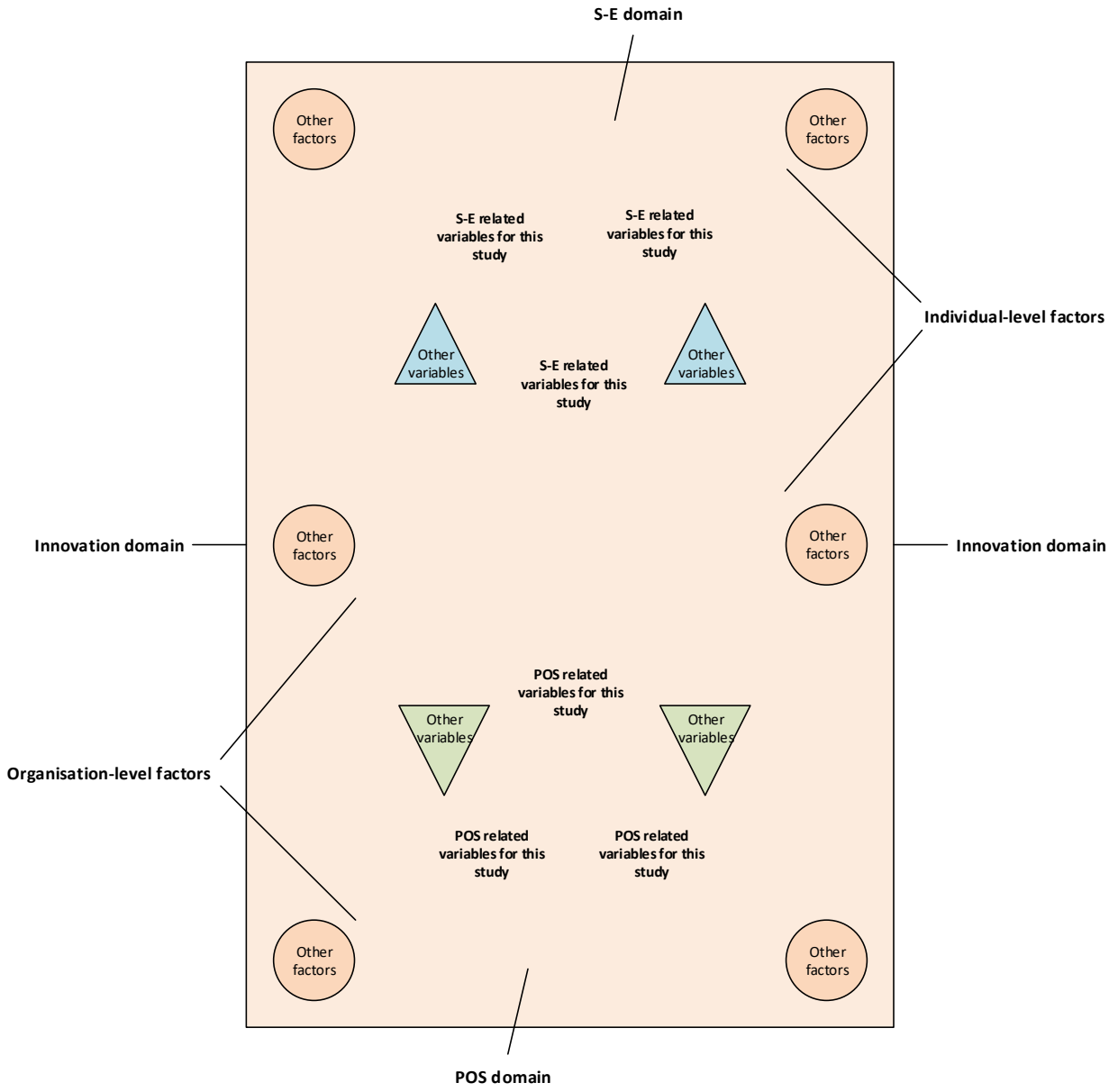

Figure 1.3: Scope of study in the innovation research landscape

Source: Author's own.

1.2 PROBLEM STATEMENT

To remain competitive, organisations should be innovative. As such, new ideas generated within organisations should be encouraged and utilised (Amabile, 1988: 126; Sternberg & Lubart, 1996: 678; Mumford, 2000: 313; Rothberg, 2004: 1060; Rothberg, 2005: 476; Flynn *et al*., 2003: 417). Often employees generate innovative and seemingly useful ideas to aid in resolving challenges or utilising opportunities in their working environment (Schaffer & Paul-Chowdhury, 2002: 1; Rothberg, 2004: 1060; De Jong & Den Hartog, 2007: 41; Amabile, 1983: 361; Da Silva & Oldham, 2012: 135). The generation of seemingly useful ideas does not necessarily imply the implementation thereof (Baer, 2012: 1102; Schaffer & Paul-Chowdhury, 2002: 1; Linton, 2002: 65), as an idea has to be implemented to create value (Levitt, 1963: 79). For organisations to become

more innovative, the challenge for management is to determine how to successfully translate useful ideas of employees into innovative action and results (Schaffer & Paul-Chowdhury, 2002: 1; Levitt, 1963: 79).

The interactionist perspective (Woodman *et al*., 1993) implies that the extent to which employees generate and implement useful ideas depends not only on their individual characteristics (Sawang & Unsworth, 2011: 1004; Sproull & Hofmeister, 1986: 44; West & Farr, 1989: 15), but also on their working environment (Amabile, Schatzel, Moneta & Kramer, 2004: 5; Oldham & Cummings, 1996: 607; Shalley & Gilson, 2004: 33; Johns, 2006: 393; Sawang & Unsworth, 2011: 1004; West & Farr, 1989: 15). As a result, individual- and organisational factors should both be investigated to increase the likelihood of implementing seemingly useful ideas within organisations (Anderson *et al*., 2014: 1302; Anderson *et al*., 2004: 161; Woodman *et al*., 1993: 294).

Prior research on innovation predominantly focused on either individual or organisational factors (Crossan & Apaydin, 2010: 1166). Anderson *et al*. (2014: 1302) called for an unambiguous approach to be followed in innovation research whereby multilevel designs are used to explore and assess factors associated with innovation (e.g. individual and organisational factors). Baer (2012: 1116) also argued that consideration of both individual- and organisational factors may be a fruitful avenue for innovation-related research. Therefore, to increase the implementation potential for employees' seemingly useful ideas, more insight into the influence of both individual and organisational factors on idea implementation is essential.

Research on individual factors often refers to the positive influence of self-efficacy (S-E) on individual innovation (e.g. Axtell *et al*., 2000: 266; Tierney & Farmer, 2002: 1138; Kumar & Uzkurt, 2010: 1; Onyishi & Ogbodo, 2012: 2; Hammond *et al*., 2011: 92). However, the construct of S-E has yet to be assessed in the context of innovation management within organisations (Gerber, Martin, Kramer, Braunstein & Carberry, 2012: 1). Likewise, research within the field of innovation has revealed that an organisation's implementation climate is a critical element for the implementation of ideas (Klein & Sorra, 1996; Dong, Neufeld & Higgins, 2008; Taylor & McAdam, 2004; Klein, Conn & Sorra, 2001; Sawang & Unsworth, 2011). Specifically, support from managers showed to be an essential factor that could have a significant influence on the implementation climate within organisations (Angle & Van de Ven, 1989; Beer, 1988; Leonard-Barton & Krauss, 1985; Nadler & Tushman, 1989; Nutt, 1986, all cited in Klein & Sorra, 1996: 1074; Klein & Knight, 2005; Hunter, Bedell & Mumford, 2007; Sawang & Unsworth, 2011). As the construct of perceived organisational support (POS) for innovation was included in various theoretical models within innovation research (West & Farr, 1989; Hammond, Neff, Farr, Schwall & Zhao, 2011; Scott & Bruce, 1994; Yuan & Woodman, 2010; Baer, 2012), POS is a key area of the organisational context to consider when trying to increase the success rate of the implementation of employees' seemingly useful ideas.

A number of studies have deliberated the positive effect of S-E on individual innovation (e.g. Axtell *et al*., 2000; Tierney & Farmer, 2002; Stajkovic & Luthans, 1998; Kumar & Uzkurt, 2010, Onyishi & Ogbodo, 2012, Hammond *et al*., 2011); and a number of studies empirically investigated the link between POS and innovation (West & Anderson, 1996; Dougherty & Hardy, 1996; Antoncic & Zorn, 2004; Hornsby, Kuratko, Shepherd & Bott, 2009). What remains to be explored, however, is to assess the influence of S-E and POS on idea implementation by employees in an organisation; the main reason why this study was conducted.

1.3 OBJECTIVES OF THE STUDY

Against the background of the stated research problem, the primary objective of this study was to investigate idea implementation by employees in an organisation through the constructs of S-E and POS.

To address the primary objective, the following secondary objectives were pursued:

1. To identify and explore variables related to the constructs of S-E and POS in the context of idea implementation by employees in an organisation;
2. To investigate the relationships between the variables identified in Objective 1 and the constructs of S-E and POS;
3. To investigate the relationships between S-E and POS and the chance of successfully implementing an idea; and
4. To investigate the relationships between the variables identified in Objective 1 and the chance of successfully implementing an idea.

The research method which was applied to attain the stated objectives is disclosed in the next section.

1.4 RESEARCH METHOD

The research approach for this study was a mixed method, employing a combination of qualitative and quantitative approaches. Mixed research approaches offers the best of both worlds of research approaches: the in-depth, contextualised, and natural insights of qualitative research, coupled with the more efficient but less rich or compelling predictive power of quantitative research (Saunders, Lewis & Thornhill, 2007: 146).

A sequential exploratory approach was followed (Creswell, 2008: 211), first involving an exploratory phase of qualitative data collection and analysis to gain more insight into the main constructs and to identify and explore associated variables (Zikmund, 2003: 111) – Phase One; followed by a second phase of quantitative data collection and analysis, which built on the variables identified in the first phase – Phase Two.

Figure 1.4 below provides a generalised process flow and options of a mixed method approach as presented by Zikmund (2003: 61), and in the cases of multiple choices, the grey boxes indicate the choices that were applied to this study. Following the flow of Figure 1.4, the following choices were made: As part of the first phase, problem discovery and defining variables, the Success Case Method (SCM) was chosen as an exploratory research technique (SCM is discussed in more detail in Section 1.4.1 below); and the findings of the exploratory phase were then included in the research design for the second phase, where a laboratory experiment was selected (discussed in more detail in Section 1.4.2.1 below).

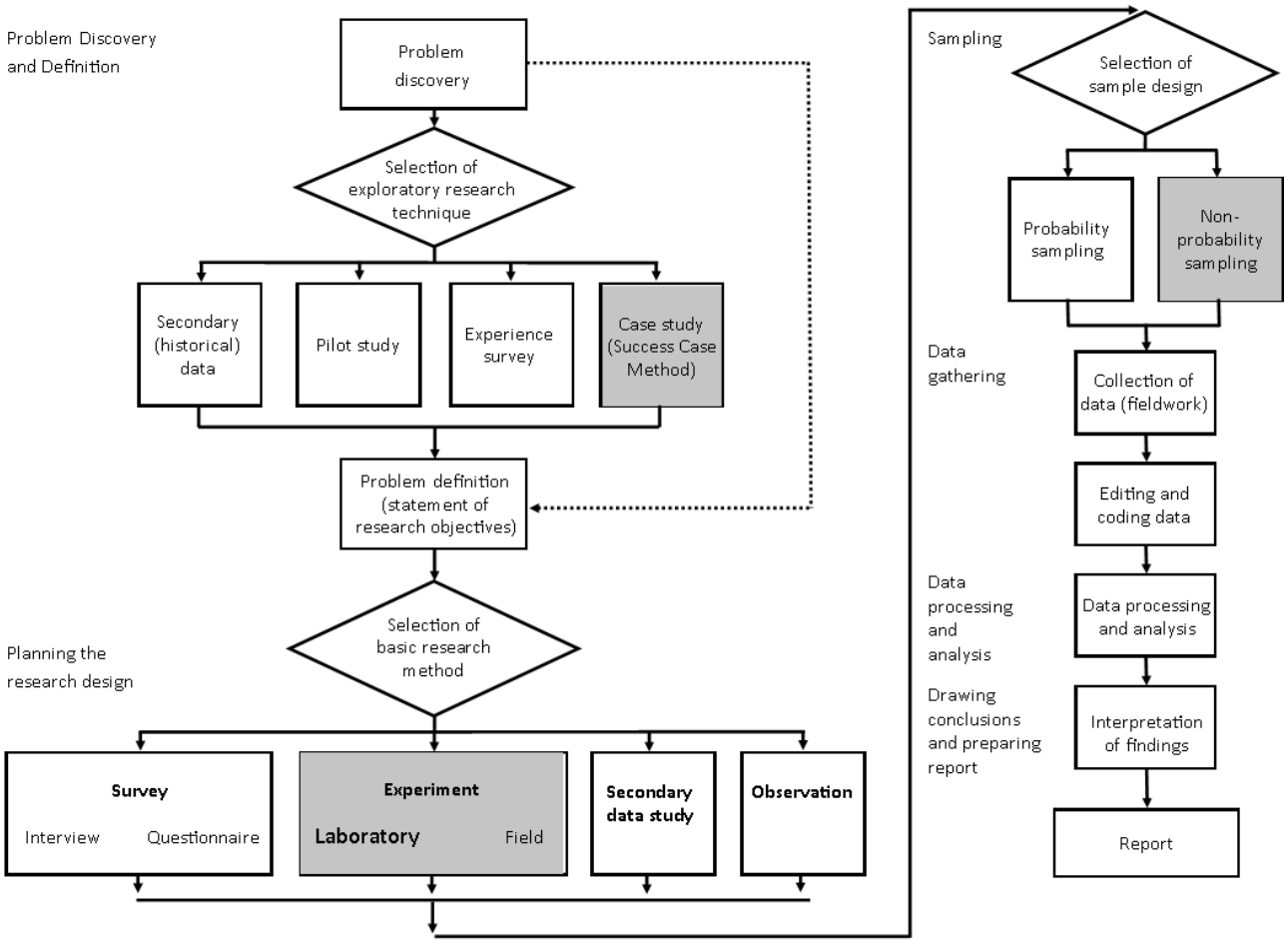

Figure 1.4: Mixed method research approach applied in this study

Source: Adapted from Zikmund, 2003: 61.

The major benefit of firstly conducting qualitative, exploratory research, was that it generated insights concerning the main constructs (S-E and POS) and identified the associated variables for hypothesis testing in the next phase (Zikmund, 2003: 132).

To summarise, for the purpose of this study a qualitative phase was firstly conducted to explore the main constructs of S-E and POS and to identify and explore associated variables (Phase One). Secondly, a quantitative phase was utilised to test hypotheses based on the expected relationships

between the main constructs, associated variables and idea implementation (Phase Two). Following in the next sections is an overview of the respective phases.

1.4.1 Phase One: Qualitative research

An exploratory study is a valuable means of finding out what is happening; to seek new insights; to ask questions and to assess phenomena in a new light (Saunders *et al.,* 2007: 133). Therefore, the purpose of this phase was to investigate how the main constructs of S-E and POS manifest in idea implementation in an organisation, and to gain more insight into the influence of these constructs on idea implementation.

The purpose of this phase was firstly to identify people who have been successful in implementing useful ideas in an organisation; secondly, to investigate the behaviours associated with S-E and POS that have contributed to the successful implementation of the identified people's ideas; thirdly, to formulate variables related to S-E, POS and idea implementation in an organisation based on the examined behaviours; and lastly, to put forward hypotheses based on the expected relationships between the formulated variables and the main constructs that could be examined empirically in the second phase of the study.

The Success Case Method (Brinkerhoff, 2003) was selected for the qualitative phase of the study. The Success Case Method (SCM) was developed by Brinkerhoff (2003: 2) as a way to find out what groups/individuals have been successful in achieving a specific business result and why they have been successful; and what groups/inidividuals have been unsuccessful in achieving a specific business result and why have they been unsuccessful.

The SCM was selected for this phase of the study because it is rooted in solid scientific and evaluative inquiry (Brinkerhoff, 2003: 22) and it is a pragmatic method to identify and explain the differences between performers who are successful in implementing change and those who are not; to identify the factors that contribute to intervention success or failure; and to provide rich information related to the direct results of the intervention.

Also, it has been argued above that innovation is about change, and the SCM is a distinguished method for establishing what works and what does not regarding change. The SCM is described in more detail in Section 6.2.

1.4.1.1 Data collection

An in-depth interview is a technique used in the exploratory stage of research to uncover the "why" of people's behaviour (Zikmund, 2003: 130), and therefore face-to-face in-depth interviews were conducted with the participants (that had been selected from the designated success and non-success cases) to collect data.

An interview guide was developed based on the interview protocol and interview process prescribed by Brinkerhoff (2003: 27) for the SCM. The aim was to capture and document the very particular and personal ways in which idea implementation has happened with a focus on the influence of the main constructs of S-E and POS. The SCM as it was applied in this study is described in detail in Chapter 6.

Finally, the interview step concluded with a write-up of the success cases (Brinkerhoff, 2003: 134).

1.4.1.2 Sampling

The sampling process consisted of defining the target population; determining the sample criteria; selecting a sampling method and procedure; and determining the sample size (Given, 2008: 799).

The target population for this phase was employees who were successful at implementing their useful ideas in for-profit business organisations, as well as employees who have suggested ideas, but did not get their ideas implemented. Organisations, for the purpose of this study, were taken as general business organisations which operate in a competitive market environment in the private sector and which provide goods and services to the general public on a for-profit basis. For example, this definition included banks, retail stores, manfucacturing businesses that sell directly to the public, etc., and this definition excluded government organisations, not-for-profit organisations, hi-tech industries, political organisations, etc.

The non-probability sampling techniques of convenience sampling, snowball sampling, and purposive sampling were used collectively in this phase to select participants (Given, 2008: 562).

The sampling process that was followed in Phase One of this study is described in detail in Section 6.3.

Ultimately, the researcher obtained access to four organisations which adhered to the definition of “organisation” as described above, and which also fitted the description of fostering innovation and striving to be more innovative. Five participants were secured at each organisation for the in-depth interviews, making it a total of 20 participants for Phase One of the study.

1.4.1.3 Data analysis

As explained above, the nature of Phase One was exploratory and the objective was to gain more insight into the main constructs of S-E and POS and the associated behaviours which influence the implementation of useful ideas by employees in an organisation, and to deduct the variables to examine in Phase Two of this study.

Data analysis is an integral part of qualitative research and constitutes an essential stepping-stone toward both gathering data and linking one’s findings with higher order concepts. Hence the aim of

the data analysis process was to make sense of the interview data (Creswell, 2008: 183) and through different analyses, move deeper into comprehending the data to ultimately interpret the larger meaning of the data related to the research objective(s), in this case, to formulate variables related to the main constructs in the context of idea implementation by employees in an organisation.

Figure 1.5 below summarises the process the researcher followed for analysing the qualitative data for Phase One.

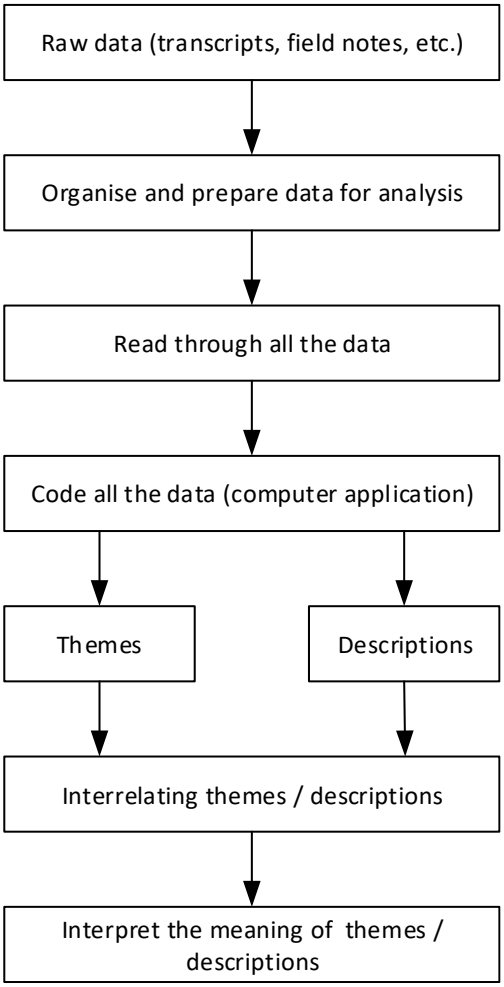

Figure 1.5: Process for analysing qualitative data

Source: Adapted from Creswell, 2008: 185.

The researcher made use of a suitable qualitative data analysis (QDA) software program, Atlas.ti, to help code, organise, and sort the data and information to assist with the analysis thereof.

1.4.1.4 Outcome of Phase One

The outcome of Phase One was the identification of appropriate variables for Phase Two of the study. Ultimately, six variables were identified that were associated with S-E and POS and

furthermore were regarded as having a possible influence on idea implementation by employees in an organisation. The variables are listed in Table 1.6.

Table 1.6: Selected variables for Phase Two

Main construct	Variable
POS	Active listening
POS	Managerial confidence
POS	Consultation
S-E	Preparedness
S-E	Communication
S-E	Inquisitiveness

These variables were then considered for the qualitative phase (Phase Two) of the mixed method approach chosen for this study. The next section deals with the applicable matters for Phase Two of the study.

Figure 1.6 below displays where these variables fit into the scope of this study, relating them back to Figure 1.3 above, i.e. indicating the variables related to S-E and POS that were selected for this study.

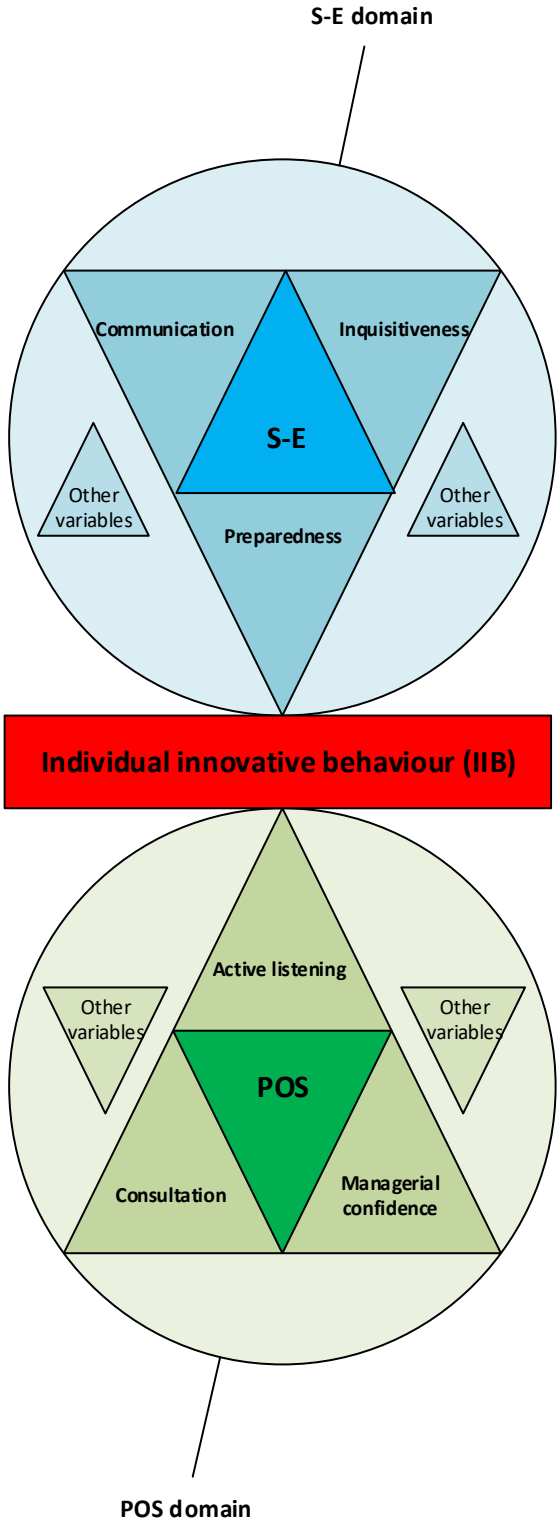

Figure 1.6: Study variables related to S-E and POS

Source: Author's own.

1.4.2 Phase Two: Quantitative research

An experimental research design was selected for Phase Two of the study. The purpose of an experiment is to study causal links, whether a change in one independent variable produces a change in another dependent variable (Zikmund, 2003: 257). The simplest experiments are concerned with whether there is a link between two variables, and experiments that are more complex also consider the size of the change and the relative importance of two or more independent variables (Zikmund, 2003: 261).

Thus, the objective of Phase Two was to investigate empirically, through an experiment, whether the identified variables from Phase One have an influence on idea implementation by employees in an organisation.

1.4.2.1 Experiment

A full factorial design was utilised for the experiment which was conducted in this study. A factorial design involves using two or more treatment variables (the variables identified in Phase One), i.e. the independent variables, to examine the independent and simultaneous effects of these treatment variables on an outcome, i.e. the dependent variable (implementation of an idea). This widely used behavioural research design explores the effects of each treatment separately and also the effects of variables used in combination, thereby providing a rich and revealing multi-dimensional view (Creswell, 2008: 159).

The selected independent variables from Phase One (Preparedness, Active listening, Managerial confidence, Consultation, as listed in Table 1.6 above) were manipulated through the use of the experimental vignette methodology (EVM). EVM consists of presenting participants with carefully constructed and realistic scenarios to assess dependent variables including intentions, attitudes, and behaviours (Aguinis & Bradley, 2014: 351). EVM enhances experimental realism and also allows researchers to manipulate and control independent variables, thereby simultaneously enhancing both internal and external validity (Aguinis & Bradley, 2014: 352) of an experiment. For this study, the scenario presented to participants evidently involved a situation concerning idea implementation in an organisational setting.

The design of the experiment is described in detail in Chapter 7, and the manipulation of the independent variables is described in detail in Section 7.3.

1.4.2.2 Data collection

Data was collected through the use of personally administered questionnaires. The questionnaires presented the different manipulations of the independent variables via a vignette, and consequently participants were asked to rate the chance of successfully implementing an idea on a semantic differential scale. The questionnaires were also used to measure the main constructs, S-

E and POS, and the two variables which were not manipulated as part of the experiment, regarded as constants (Communication and Inquisitiveness). Demographic variables such as age, gender, etc. – included to be used as control variables – were also recorded on the questionnaires.

1.4.2.3 Measurement

The dependent variable – the chance of successfully implementing an idea – was measured with a semantic differential scale which was based on the definitions of successful innovation implementation as revealed in the literature (Baer, 2012: 1109; Axtell *et al*., 2000: 272; Gerber *et al*., 2012: 2; Klein & Sorra, 1996: 1055). Pre-determined scales were used to measure the constructs of S-E and POS as well as the other variables of the study. The literature revealed valid and reliable established measures for S-E (Onyishi & Ogbodo, 2012: 6; Kumar & Uzkurt, 2010: 8); and for POS (Pundt, Martins & Nerdinger, 2010: 182; Onyishi & Ogbodo, 2012: 6; Eisenberger, Fasolo & Davis-LaMastro, 1990: 52).

1.4.2.4 Sampling

The target population for this study comprised full-time employees regarded as having the potential to generate and implement useful ideas in their various work environments. The employees must have worked for a minimum of one year for their organisations, and executive management as well as departmental- and business unit managers were excluded from the target population. The originations that were considered for this study were regarded as profit orientated business organisations in a competitive market environment in the private sector, and where innovation is valued and expected in the organisation.

A non-probability sampling technique was used in this phase to select participants (Given, 2008: 562). Participants were selected because they were accessible and therefore relatively easy for the researcher to recruit, i.e. convenience sampling.

1.4.2.5 Data analysis

A factorial experiment research design was used to investigate the influence of identified variables (independent variables) on the chance of an employee successfully implementing a useful idea in an organisation (dependent variable). The main constructs (S-E and POS), selected control variables, and the variables which were not manipulated in the experiment (Communication and Inquisitiveness) were also measured by means of a personally administered questionnaire.

After the questionnaires had been completed, the data was cleaned, coded and analysed with the software programme, SPSS.

Structural equation modelling (SEM), analysis of variance (ANOVA), independent sample t-tests and linear regression were applied to test the hypotheses which were formulated based on the

expected relationships between the respective variables and constructs from which data was collected.

1.4.3 Summary of research method

The following main steps of the mixed method research methodology were applied for this study:

i) Identify success and non-success cases related to idea implementation by employees in an organisation.

ii) Conduct in-depth interviews with selected success and non-success cases to document the participants' experiences and to probe for the behaviours related to the main constructs (S-E and POS).

iii) Analyse the data obtained through the in-depth interviews to identify and explore variables related to idea implementation by employees in an organisation.

iv) Formulate hypotheses based on the expected relationships between the main constructs, associated variables and idea implementation.

v) Collect empirical data to test the hypotheses.

vi) Analyse and interpret the data.

The ethical considerations concerning the study are covered in the next section.

1.5 ETHICAL CONSIDERATIONS

The main ethical considerations which prevail in social research – and the potential risks involved for this study – are voluntary participation, no harm to participants, anonymity, confidentiality and deception (Babbie, 2013: 62).

Regarding voluntary participation, all potential participants were at all times informed, verbally and on consent forms, of the principle of voluntary participation. No participant was involved in this study in any manner if the researcher did not have proof that this principle had been communicated to the potential participant and that the participant understood it and had given their informed consent.

The consideration of no harm to participants probably posed the highest risk to this study. The participants of the SCM phase shared their experiences in their work environment, and the participants in the experiment were also exposed to this study in their normal working environment.

Concerning the consideration of no harm to participants, the clearest concern in the protection of participants' interests and well-being is the protection of their identity (Babbie, 2013: 65). Two techniques assist researchers in this regard, namely anonymity and confidentiality (Babbie, 2013:

65). The researcher therefore took the utmost care that a given response by a given participant could not be identified by anybody who read about the research – the principle of anonymity. Furthermore, the researcher also undertook not to reveal the identity of any of the participants of this study – the principle of confidentiality. This was achieved by removing any identifying information as soon as it was no longer necessary (Babbie, 2013: 67).

The matter of deception concerns the researcher concealing their identity in the research project (Babbie, 2013: 68). The researcher believes that concealing his identity was not required for the purpose of this study, and participants were always informed of the researcher's identity, purpose and actions concerning the research project.

The required informed consent forms (Phase One) and organisational permission request forms (Phase One and Phase Two) of the University of Stellenbosch Business School (USB) were utilised for this study. For the purpose of Phase Two of the study, informed consent was attained on the basis that a person could just leave the questionnaire blank if they did not want to participate in the study. An explanation of the possible risks, confidentiality and anonymity was provided in the introduction which was given before the questionnaires were distributed to participants. The research design for this study was also subject to the approval of the Departmental Ethics Screening Committee (DESC) of the USB.

Lastly, the researcher believes that this study had a low risk in terms of ethical considerations and did not pose any serious threat to any participant or organisation involved in this study.

1.6 THE IMPORTANCE AND CONTRIBUTION OF THE RESEARCH

According to Baer (2012: 1102), studies that examine the phenomenon of ideas being converted into actual innovations, that is, implemented or used, are relatively rare. Rothberg (2005: 476) also found that there is inadequate acknowledgement of the way in which ideas progress in organisations.

Thus, the importance of this research for industry would be to enable organisations to appreciate what is happening to ideas in the workplace, and to improve the chances of potentially useful ideas of employees being implemented through an increased awareness of how S-E and POS and related variables influence IIB.

This study also contributes to the knowledge base on innovation, since the combined influence of S-E, as an individual-level construct, and POS, as an organisational-level construct, on innovation, and where innovation is regarded explicitly as idea implementation by employees in organisations, has not been studied before.

The use of an experimental method to investigate innovation, regarded as idea implementation by employees in an organisation, is also a contribution, since the experiment as a research method has been a largely missed opportunity in innovation research, in particular for creating applicable knowledge for business organisations in the shape of new innovation tools and methods (Sørensen, Mattsson & Sundbo, 2010: 313).

1.7 DELIMITATION

There are multiple theories which have been applied to investigate and explain innovation, and there are also multiple factors that have been identified which influence innovation. For this study, the focus was only on the constructs of S-E (individual level) and POS (organisational level) and specific variables related to these constructs.

Innovation also occurs in different kinds of organisations (e.g. manufacturing organisations vs. service organisations, profit vs. non-profit organisations) with various functional departments and different cultures and approaches to innovation-related matters.

Furthermore, it was argued that there are different types of innovation (product, service, process, business model, technical and administrative), as well as different degrees of innovation (incremental to radical).

In this study, the type and degree of innovation under investigation was an incremental (small scale) process innovation which occurred in an administration-intensive commercial business in the service industry.

Lastly, this study was conducted in Namibia, a developing country in Africa with a fairly small economy as opposed to developed countries' economies, and the findings of this study may be specific to this kind of environment.

1.8 OUTLINE OF THE STUDY

The study is presented as follows:

Chapter 1 is the introductory chapter and provides background to the problem of the study, the main objectives, method of investigation and ethical considerations. Chapters 2, 3 and 4 deal with an overview of the literature about various aspects relating to innovation, and the two main constructs, namely S-E and POS.

Chapter 2 deals in more detail with the concept of innovation. An analysis is firstly provided on how innovation has been researched, with a specific focus on the concepts relevant for this study, namely the level of analysis, the innovation process and individual innovative behaviour (IIB). A further drill-down into IIB is followed by investigating the factors that influence idea implementation.

The chapter concludes with the line of reasoning for the choice of the main constructs for this study.

Chapter 3 provides an overview of S-E and examines the underlying relationships between S-E and IIB. The attributes related to S-E in the context of IIB are also reviewed and lastly a concise overview is given of how S-E is treated as a variable in research.

Chapter 4 provides an overview of POS and examines the underlying relationships between POS and IIB. The attributes related to POS in the context of IIB are also reviewed and lastly a concise overview is given of how POS is treated as a variable in research.

In Chapter 5, the design and methodology of the study are discussed. The chapter begins with an explanation of the worldview for this study and a justification for the chosen approach to inquiry for this study. A mixed method research approach consisting of two phases was applied for this study, and following the justification of the research approach are detailed explanations of the research design for each of the two phases.

In Chapter 6, a detailed account is provided of Phase One of the study, i.e. the qualitative phase, including practical matters such as sampling, data collection and analysis, measurements, validity and ethical considerations. Since the results of Phase One served as input to Phase Two for the study, the findings for Phase One are also divulged in this chapter.

In Chapter 7, a detailed account is provided of Phase Two of the study, i.e. the quantitative phase where a laboratory experiment was conducted. Firstly, the treatment of the independent variables is explained, followed by a description of the measurement instruments that were used for the different variables. This is followed by an allocation of hypotheses for the expected relationships between the variables, an outline of the sampling process and a discussion around the validity of the experiment. The chapter is concluded with discussions concerning ethical considerations and the matter of causality.

The empirical results from the statistical tests that were conducted on the collected data from Phase Two of the study are presented in Chapter 8. Firstly, a detailed description of the participant sample is presented, followed by the presentation of the results for the statistical analyses applied to the hypotheses based on the expected relationships between the relevant constructs and variables.

The summary, conclusions and recommendations of the study are presented in Chapter 9, which concludes with sections on the limitations of the study and identifies possible areas for future research.

CHAPTER 2
INNOVATION

2.1 INTRODUCTION

The purpose of this chapter is to review the concept of innovation in more detail, and to present the arguments for the selection of the relevant constructs for this study.

Firstly, an analysis is provided on how innovation has been researched, leading to a more specific focus on the concepts relevant for this study, namely the level of analysis, the innovation process and individual innovative behaviour (IIB). This is followed by an overview of IIB, where the theoretical constructs relevant for IIB are laid out. A further drill-down into IIB is followed by an investigation of the factors which influence idea implementation. The chapter concludes with the arguments for the choice of the main constructs for this study.

2.2 HOW INNVOVATION HAS BEEN RESEARCHED

Some of the challenges concerning the review of the innovation research literature are the inconsistency in the terminology used and the fact that there is not one explicit universal taxonomy for innovation (Downs & Mohr, 1976: 701; Wolfe, 1994: 405; Gopalakrishnan & Damanpour, 1997: 19, Anderson *et al*., 2014: 1302; Crossan & Apaydin, 2010: 1164). Innovation is a broad term with multiple meanings across different fields. It draws on theories from a variety of disciplines and has been studied using a wide range of research methodologies (Baregheh *et al*., 2009: 1324; Crossan & Apaydin, 2010: 1155). Studying innovation is further complicated by multiple levels of analysis and dimensions, and inconsistent operationalisation of the primary constructs (Crossan & Apaydin, 2010: 1165). All of these factors have contributed to some extent to mixed and inconsistent empirical results, a view shared by many researchers (Wolfe, 1994; Fagerberg, 2003; Van der Panne *et al*., 2003; Damanpour & Wischnevsky, 2006; Corso & Pellegrini, 2007; Crossan & Apaydin, 2010).

Hence, to determine the approach to be followed in this study and consequently to clarify where this research fits into the existing body of knowledge, the researcher reviewed the most expedient frameworks and structures for organising research on innovation that were found in the literature. These are the studies of Wolfe (1994), Anderson *et al*. (2004), Crossan and Apaydin (2010) and Anderson *et al*. (2014). All of these studies had the objective of reviewing and summarising the state of the knowledge on innovation at the time of the study, and correspondingly suggested approaches to align subsequent innovation research to address the inconsistencies in research efforts.

A brief overview is given of the approaches followed by these meta-reviews to analyse innovation research, as well as a summary of some of their most important findings. Lastly a comparison of the respective meta-reviews is provided, followed by an explanation of the approach chosen for this study, as guided by these meta-reviews.

2.2.1 The meta-analysis of Wolfe

Wolfe (1994: 407) concluded that the literature on organisational innovation is composed of three discernible streams which developed sequentially. While the three streams are concerned with the general phenomenon of organisational innovation, they have different foci as each addresses a different question, has a different unit of analysis, and a different dependent variable. The three research approaches and their corresponding questions and foci are listed in Table 2.1 below. To elucidate Table 2.1, taking the second row as an example: Organisational innovativeness is the research approach, involving research questions to establish "what determines organisational innovativeness", and the research focus for these studies was to discover the factors (determinants) that influence organisational innovativeness.

Table 2.1: Main innovation research approaches identified by Wolfe

Research question	Research approach	Research focus
What is the pattern of diffusion of innovation through a population of potential adopter organisations?	Diffusion of innovation research	Addresses the diffusion of an innovation over time and/or space.
What determines organisational innovativeness?	Organisational innovativeness research	Addresses the determinants of the innovativeness of organisations.
What are the processes organisations go through in implementing innovations?	Process theory research	Addresses the process of innovation in organisations.

Source: Wolfe, 1994: 407.

2.2.2 The meta-analysis of Anderson, De Dreu and Nijstad

Anderson *et al.* (2004) carried out a detailed content analysis of all innovation papers published over the period of 1997 to 2002 in the top rated scientific journals in management sciences. Based on this analysis, Anderson *et al*. (2004: 150) presented an overview of the main factors which have been found consistently across several primary source studies to be facilitators of innovation at different levels of analysis. Anderson *et al.* (2004: 152) are of the opinion that a substantial body of research has accumulated on various factors at the individual, group, and organisational levels of analysis found to be related to innovation in the workplace and that the body of research is thus sufficiently mature now for scholars and practitioners to be able to list in schedule form the antecedent factors most likely to be facilitative of innovation.

Anderson *et al*. (2004: 150) listed the facilitators of innovation at three levels of analysis, namely: Individual, Work group and Organisational, and also listed the characteristics, dimensions and key studies for each level of analysis. Table 2.2 below lists the major variables that have been researched on each level of analysis, as found by Anderson *et al*. (2004: 150).

Table 2.2: Innovation research findings in overview: facilitators of innovation at three levels of analysis

Level of analysis	Variables
Individual	Personality; Motivation; Cognitive ability; Job characteristics; Mood states
Work group	Team structure; Team climate; Team member characteristics; Team processes; Leadership style
Organisational	Structure; Strategy; Size; Resources; Culture

Source: Anderson *et al*., 2004: 151.

Anderson *et al.* (2004: 152) also found two other important areas of contribution that innovation research has made which are relevant for this study, namely that significant advances have been made in our understanding of innovation processes in organisations; and that the level of analysis has shifted from being purely at the macro-organisation level toward individual and work-group-level processes and effects. Anderson *et al*. (2004: 152) ascribed the latter contribution (individual- and work group-level process and effects) particularly to the contribution which organisational psychologists have made to this body of knowledge.

2.2.3 The meta-analysis of Crossan and Apaydin

Crossan and Apaydin (2010: 1154) conducted a comprehensive systematic review of the literature on innovation (10 946 papers with “innovation” in the title) and synthesised various research perspectives into a multi-dimensional framework of organisational innovation, which are listed in Figure 2.1 below.

Figure 2.1 demonstrates how the determinants of innovation are grouped according to the theoretical lenses that are used to study innovation (individual, organisation, process), and also indicates the dimensions of innovation grouped per innovation as a process and innovation as an outcome.

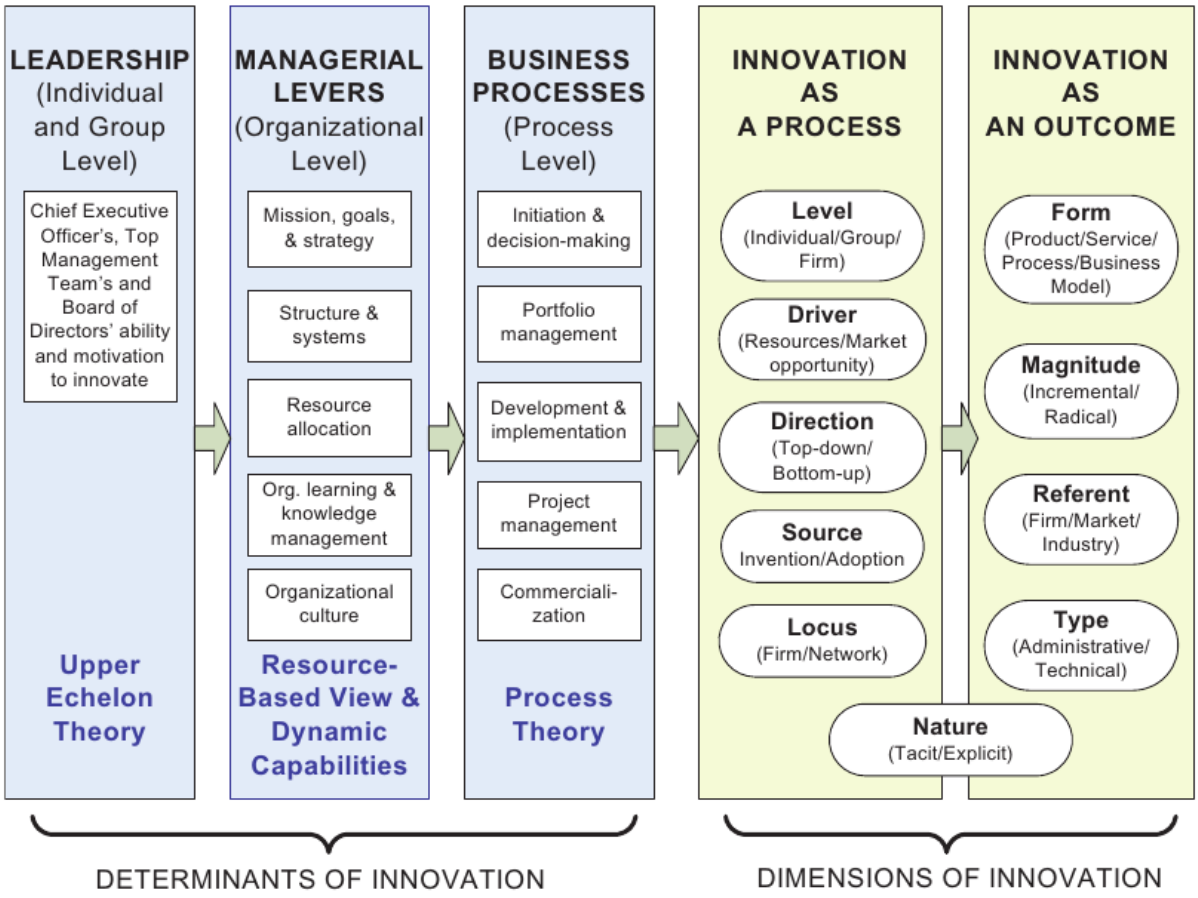

Figure 2.1: Multi-dimensional framework of organisational innovation

Source: Crossan & Apaydin, 2010: 1167.

Crossan and Apaydin (2010: 1162) reviewed the spectrum of the theoretical lenses used to study innovation, and organised them by level: individual, organisation, macro, multilevel. Crossan and Apaydin (2010: 1167) also organised the determinants of innovation (in their consideration set) by level of analysis (individual and group, organisational, process) and categorised the determinants of innovation further into three distinct meta-theoretical constructs: innovation leadership, managerial levers and business processes. Each construct is supported by a distinct theory: innovation leadership by the upper echelon theory, managerial levers by the dynamic capabilities theory and business processes by process theory.

Table 2.3 below provides a summary of other findings and recommendations that Crossan and Apaydin (2010) made regarding the alignment of subsequent innovation research, in order to address the inconsistencies in research efforts concerning innovation up to the time of their study.

Table 2.3: Innovation research findings of Crossan and Apaydin

Construct	Findings
Dimensions of innovation	Crossan and Apaydin (2010: 1161) found that the dimensions of innovation proposed by Gopalakrishnan and Damanpour (1997), namely level of analysis (industry, organisation, or subunit); stage of innovation process (ideation, project definition, problem solving, development and commercialisation); and type of innovation (product/process, incremental/radical and administrative/technical), are neither exhaustive, nor systematic and they identified several additional dimensions. Crossan and Apaydin (2010: 1161) also found that the two most frequently used dimensions in innovation-related research to date are the level of analysis (individual / group / firm) and the type of innovation (administrative / technical). Crossan and Apaydin (2010: 1166) concluded that innovation as a process will always precede innovation as an outcome. Process answered the question 'how' and outcome answered the question 'what' (European Commission, 1995: 4).
Level of analysis	Crossan and Apaydin (2010: 1161) found that half of innovation-related research dealt with the organisation level of analysis.
Type of innovation	Crossan and Apaydin (2010: 1161) found that the most common type of innovation studied, was product innovation, which was the subject of about 20 percent of research; and in half of the cases the type of innovation treated in the paper was unclear or not defined.
Determinants of innovation	Crossan and Apaydin (2010: 1164) found no overarching framework of innovation determinants and also concluded that even review papers that were attempting to consolidate existing research were covering somewhat different issues and levels of analysis. These included geo-political territorial models; market structure-, network-, firm-level- and process models; implementation phase only; individual level of analysis; and leadership.

Source: Adapted from Crossan & Apaydin, 2010: 1161.

2.2.4 The meta-analysis of Anderson, Potočnik and Zhou

Anderson *et al*. (2014) reviewed the body of research on innovation with particular attention to the period from 2002 to 2013. The authors discussed several influential theories of innovation and then applied a comprehensive levels-of-analysis framework to review existing research into individual, team, organisational, and multilevel innovation. In conclusion, Anderson *et al.* (2014) proposed a guiding framework for future research comprising 11 major themes.

A summary of the level of analysis and the variables or constructs that were researched on each level by Anderson *et al*. (2014) are listed below in Table 2.4.

Table 2.4: Innovation research findings of Anderson *et al*.

Level of analysis	Sub-level of analysis	Construct / Variable
Individual	Individual differences	Personality; Goal orientation; Values, Thinking styles; Self-concepts; Knowledge; Abilities
	Individual factors	Psychological states; Motivation; Others
	Task contexts	Job complexity; Goals and job requirements
	Social contexts	Leadership and supervision; Co-worker influences; Customer influences; Other social influences; Social networks
Team		Team structure; Team composition; Team climate; Team processes; Team leadership
Organisation		Management related factors; Knowledge utilisation and networks; Structure; Strategy; Size; Resources; Culture; Climate; External environment; Innovation diffusion; Corporate entrepreneurship as innovation
Multilevel		Team structure; Team climate and processes; Team composition; Leadership

Source: Adapted from Anderson *et al*., 2014.

In the author's opinion, the review of Anderson *et al.* (2014) – which is the most recent – is the most comprehensive. As with the other reviews under investigation in this section, Anderson *et al.* (2014: 1298) also emphasised the view that innovation must be seen as a process and an outcome. Level of analysis is also the guiding approach for the review by Anderson *et al*. (2014); however, they were the only authors to include the category "multilevel", as one of the levels of analysis. They also went into more detail in terms of the theoretical perspectives used to study innovation than the other meta-reviews (Anderson *et al.*, 2014: 1299).

2.2.5 Comparison and findings of the meta-analyses investigated

Through a comparison of the respective studies, the following conclusions were made, as listed in Table 2.5 below.

Table 2.5: Comparison of the meta-analyses investigated

Theme	Conclusion
Similarities	Differentiation between the unit of analysis.
	How innovation is treated as a variable.
	Review of different research model.
	Different theoretical perspectives that are applicable.
	Prominence on innovation process models.
	Emphasising the importance of multiple research perspectives to investigate innovation.
Dissimilarities	Whereas Wolfe (1994: 406) and Anderson *et al*. (2004: 159) acknowledged the use of a multilevel theory for innovation, Crossan and Apaydin (2010: 1177) proposed a unifying theoretical approach on a meso level which could link managerial action with innovation as a process and outcome of organisational level.
	The reviews of Wolfe (1994) and Anderson *et al*. (2004) only discussed innovation adoption and implementation, while the review of Crossan and Apaydin (2010: 1165) and Anderson *et al.* (2014: 1314) extended the definition for innovation to include an inherent commercialisation phase.
	Whereas Wolfe (1994: 419) and Anderson *et al*. (2004: 150) gave comprehensive lists of innovation attributes, Crossan and Apaydin (2010: 1167) and Anderson *et al*. (2014) grouped the respective factors, variables and constructs, which influence innovation, into meaningful dimensions.
	Wolfe (1994) had a strong focus on the different process stages, whereas the other studies focused more on the level of analysis (individual, team, organisation).
	Wolfe (1994) listed innovation attributes that featured in the literature, and the other studies listed innovation dimensions and categorised them under the unit of analysis.
	Wolfe's (1994) main emphasis was on the different research streams (diffusion of innovation, organisational innovation, process theory research), while the emphasis of the other studies was on the main factors and variables which have been consistently found across several primary source studies to be facilitators of innovation at different levels of analysis.
	In the study of Anderson *et al*. (2004), the first evidence was revealed of more interest amongst the research community in the underlying psychological aspects relating to research on innovation.

Source: Author's own.

The key aspects taken from the respective studies under investigation (Wolfe, 1994; Anderson *et al*., 2004; Crossan & Apaydin, 2010; Anderson *et al*., 2014) for the purpose of positioning this study in the body of knowledge, are described in Table 2.6 below.

Table 2.6: Key aspects for positioning of study in the body of knowledge

Dimension	Explanation
Research approach	This research addressed two of Wolfe's three research approaches (1994: 407), namely organisational innovativeness research, i.e. addressing the determinants of innovativeness of organisations – in this study, personal and organisational determinants.
Type of organisation	Wolfe (1994: 416) rightfully pointed out that without comparative research on the innovation process in various types of organisations, researchers and practitioners alike can only speculate about the generalisability of elements in the innovation process. Thus, the researcher took cognisance of the fact that the choice of organisation for the purpose of the study would also have an influence on how the results are interpreted. This aspect is dealt with in the findings and recommendations sections of the study.
Outcome variable	This study's outcome variable (dependent variable) was operationalised as the implementation of a useful idea in an organisation.
Level of analysis	Anderson *et al*. (2004: 161) stated that innovation processes will usually span at least two levels of analysis – if not more – and that the preponderance of single-level studies has critically restricted scholars' understanding of how multilevel innovation processes develop over time. Anderson *et al*. (2004: 161) further argued that all innovations will possess features which cross the levels of analysis between individuals, work groups, and organisations, and multilevel research is sorely needed to chart these effects and processes.
Level of analysis	This study was multilevel as it investigated innovation on the individual and organisational levels, and therefore had to deal with multilevel theories. As per the recommendation of Anderson *et al*. (2004: 162), studies on this pathway have to include investigation into organisational climates for personal initiative, enacted innovations, and resultant organisational performance; and they should make use of multilevel theory and measures to demonstrate significant relations between summated individual perceptions of innovation climate, the enactment of innovations, and organisational performance.
Type of variables	The types of variables investigated in this study have been aligned to the view of Anderson *et al.* (2004: 162), who listed the variables applicable to this theme (multilevel theory and multilevel designs) as behaviours, cognitive abilities, personality characteristics and specific job characteristics at individual level; and structure and culture at the organisational level.

Source: Author's own.

In this section, an overview was given on the foremost ways in which innovation has been studied. In the next section, the research approach for this study is presented, including a breakdown of where the study fits in the existing body of knowledge.

2.3 SCOPING OUT THE THEORETICAL FIELD

A summary of the main theoretical aspects regarding how innovation has been studied (based on the meta-analyses that were consulted) is displayed below in Figure 2.2. In Figure 2.2, the theoretical aspects are listed on the left side, and the arrow then points to the various possible dimensions for each theoretical aspect respectively.

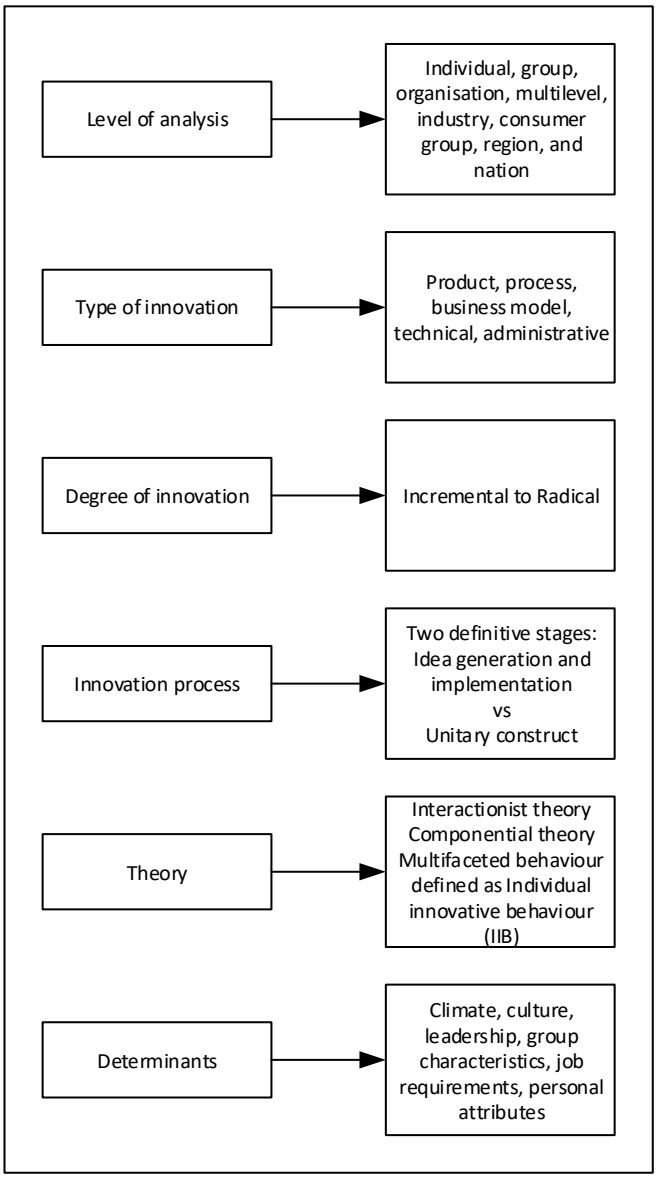

Figure 2.2: Main elements of innovation that have been studied

Source: Author's own.

It could thus be concluded that the meta-analyses which were reviewed demonstrated some similarities; however, it was apparent that a consensus view on classifying innovation as well as explanations concerning level of analysis, type of innovation, degree, process and theory, does not exist yet.

Based on the above findings, each of these considerations (level of analysis, type of innovation, degree, process and theory) was addressed in order position this research in the existing body of knowledge.

2.3.1 Level of analysis

Although all the examined meta-review studies were aimed at reviewing and summarising the state of the science on innovation research, as well as provide direction for future research, all the

studies essentially had different focus areas and objectives. Wolfe's (1994) focus was on analysing the different research streams with the objective of establishing guidelines to institute a more cumulative knowledge base. The focus of Anderson *et al*. (2004) was on encapsulating the underlying psychological factors to innovation which the research had revealed up to that stage, with the objective of the routinisation of innovation research. Crossan and Apaydin's (2010) focus was a meta-analysis of the innovation literature with the objective of synthesizing various research perspectives into a comprehensive multi-dimensional framework for innovation and finding a unifying theoretical approach. The focus of Anderson *et al.* (2014) was to present a comprehensive but constructively critical review of the growing body of literature that now comprises the multidisciplinary knowledge base on creativity and innovation in the workplace.

Although organising the level of analysis by individual, workgroup, and organisation seemed like the most prevalent method, other classifications also feature prominently in the literature.

Damanpour (1991: 557), in his much referenced study of the determinants and moderators of organisational innovation, used the categorisation of individual-, organisational- and environmental level of analysis. The "environmental" categorisation was also used by other researchers, namely Wolfe (1994: 406), Lam (2004: 5), Lloréns Montes, Ruiz Moreno and Miguel Molina Fernández (2004: 168). With regards to what exactly the "environmental" level entails, a consistent theme could not be found in the literature. Neither Damanpour (1991), Lloréns Montes *et al.* (2004) nor Hammond *et al*. (2011) gave a specific definition or explanation of the term. Wolfe (1994: 421) only gave two adjacent terms to describe the category "environmental", namely "urbanization" and "affluence". Lam (2004: 6) listed "market, technical, economic and scientific sub-environments" under environmental conditions, and pointed out that environments are industry specific.

For categorising their research, some researchers also used job factors for (West & Farr, 1989: 25; Hammond *et al*., 2011: 90; Anderson *et al*., 2014: Supplement; Axtell *et al*., 2000: 266); some used contextual factors (Oldham & Cummings, 1996: 607; Shalley & Gilson, 2004: 33; Johns, 2006: 393); and a number of researchers also looked at process as a level of analysis (Koberg *et al*., 2003: 21; Wolfe, 1994: 407; Anderson *et al*., 2004: 151; Crossan & Apaydin, 2010: 1167).

Contrariwise, Tidd (2001: 173) is of the opinion that there is unlikely to be "one best way" to manage and organise innovation, as industry- and organisational specific characteristics are likely to undermine the notion of a "universal formula" for successful innovation.

Taking the viewpoint of Tidd (2001: 173) into account and recognising that the objective of this study was mainly about gaining more insight into how individuals can improve the odds of successfully realising their potentially useful ideas in an organisation, the approach taken for this study was that the individual is the source of innovation (individual perspective), and also

recognising the fact that the individual will inevitably have to innovate within the context of the organisation (organisational perspective).

The individual perspective is grounded in social psychology (Sawang & Unsworth, 2011: 1004; Woodman *et al*., 1993: 294; Sproull & Hofmeister, 1986: 44; West & Farr 1989: 15) and the organisational perspective views the structures and functions of an organisation (Oldham & Cummings, 1996: 607; Shalley & Gilson, 2004: 33; Johns, 2006: 393), and the social interactions within an organisation (Woodman *et al*., 1993: 294; Sawang & Unsworth, 2011: 1004; West & Farr 1989: 15) as essential determinants of innovation (Egbu, 2004: 305).

An explicit approach to innovation research, namely utilising more integrative frameworks to encourage more multilevel designs to explore factors implicated in innovation across multiple levels of analysis (e.g. individual and organisational), was demanded by Anderson *et al*. (2014: 1302), based on their comprehensive review of the research on innovation, spanning over 12 years (2002–2013).

The approach of this study also resonates with the plea of Anderson *et al.* (2004: 161) that all innovations will possess features which cross the levels of analysis between individuals, work groups, and organisations, and multilevel research is sorely needed to chart these effects and processes. The study's approach also resonates with the interactionist theory (Woodman *et al.,* 1993: 294), which stresses that innovation is a complex interaction between the individual and the work situation at different levels of the organisation.

Hence, the argument has been made that innovation is a complex phenomenon with social interaction dimensions that should be understood in particular organisational contexts (Sproull & Hofmeister, 1986: 44; Axtell *et al.*, 2000: 269; Baer, 2012: 1103; Daniels *et al*., 2011: 584; Egbu, 2004: 305; Baer, 2012: 1102; Nayak, 2008: 423; Green *et al*., 2003: 421; Kanter, 1988: 186; Oldham & Cummings, 1996: 607; Shalley & Gilson, 2004: 33), and interactional psychology provides a strong theoretical base from which to model complex behavioural phenomena. The interactionist perspective also holds great promise for explaining human behaviour in complex social settings (Woodman *et al*., 1993: 294; Sawang & Unsworth, 2011: 1004; Sproull & Hofmeister, 1986: 44; West & Farr 1989: 15).

Ultimately, this research adopted a social interactionist approach (Scott & Bruce, 1994: 581). Based on the arguments above concerning the social interaction nature of innovation, the view taken for this study was that individuals can come up with ideas on their own, but in the organisational context, implementing ideas has a social element, in which individuals need to gather feedback on their ideas, involve others in selecting the best ideas, gain support for their ideas and transform their ideas into value (Daniels *et al*., 2011: 584; Axtell *et al.*, 2000: 269; Baer, 2012: 1103; Scott & Bruce, 1994: 582; Yuan & Woodman, 2010: 325; Anderson *et al.*, 2014: 1299).

In summary, regarding the level of analysis for the purpose of this study, the approach of one level of analysis was not taken, but rather the view that the individual is the source of innovation, and that implementation takes place within the social context of the organisation.

Innovation as a process and as an outcome is also a prominent theme in the literature (Koberg *et al*., 2003: 21; Wolfe, 1994: 407; Anderson *et al*., 2004: 151; Crossan & Apaydin, 2010: 1167) and in the next section, the researcher presents an examination of how the literature has dealt with the innovation process.

2.3.2 Innovation process

Based on the chosen approach above which postulates that the individual is the source of innovation, and that innovation happens within the context of the organisation, the process level of innovation, or "innovation as a process" was also reviewed in the literature.

This segment lays out the two predominant views in the literature concerning how the process of innovation unfolds; and then discloses the position taken on the process of innovation for this study.

Two prevailing views were found in the literature concerning how innovation unfolds in an organisation. The one view regards the innovation process as consisting of two distinct phases, namely an idea generation phase and an idea implementation phase (Wolfe, 1994: 411; McAdam & McClelland, 2002: 87; Anderson *et al*., 2014: 1298; Büschgens *et al*., 2013: 138.). The other view regards the innovation process as a unitary concept which unfolds by means of a cyclical, recursive process of idea generation and implementation activities (Anderson *et al*., 2014: 1299; Bledow *et al*., 2009b: 367; Magadley & Birdi, 2012: 1). Both of these views are discussed next and the chosen view for this study is provided.

The view of two distinct phases of innovation commonly identify two key concepts related to the innovation process. The one is an initiation phase – regarded as idea generation – and the other is an implementation phase (De Jong & Den Hartog, 2007: 43; Axtell *et al*., 2000: 266; Anderson *et al*., 2014: 1298; Büschgens *et al*., 2013: 138). The first phase is sometimes also referred to as a "suggestion" or "awareness" phase; however, the literature related to innovation commonly also uses the term "creativity" to refer to this first phase of idea generation (Amabile, 1983: 365; Mumford, 2000: 314; Andriopoulos, 2001: 834; Egan, 2005: 162; McAdam & McClelland, 2002: 87; Shalley, Zhou & Oldham, 2004: 934).

There are ample examples in the literature of how researchers differentiated between idea generation and idea implementation when studying innovation (Amabile, 1988; Staw, 1990; Unsworth, 1999; Unsworth & West, 1998, all cited in Axtell *et al*., 2000: 266, Wolfe, 1994; McAdam

& McClelland, 2002; Anderson *et al*., 2014: 1298; Büschgens *et al*., 2013: 138; Mumford & Gustafson, 1988: 27).

De Jong and Den Hartog (2007: 43) pointed out that the division between the two phases is believed to be the point at which the idea is first adopted, i.e. the point at which the decision to implement the innovation is made. The first phase ends with the production of an idea, while the second phase ends as soon as the idea is implemented. De Jong and Den Hartog (2007: 43) also claimed that many studies have focused mainly on the creative or idea generation stage of innovation.

Conversely, treating innovation as a linear process and differentiating between an idea generation- and an idea implementation stage is not always the norm when studying innovation. Some authors argued that idea generation occurs not only in the early stages of innovation processes but, rather, they suggested a cyclical, recursive process of idea generation and implementation activities (Anderson *et al*., 2014: 1299; Bledow *et al*., 2009b: 367; Leeuwis & Aarts, 2011: 23).

There is indeed some empirical support for the view of innovation as a cyclical, recursive process of idea generation and implementation, with several studies showing that the innovation process as it unfolds over time is "messy, reiterative, and often involves two steps forward for one step backwards plus several side steps" (King, 1992; Van de Ven *et al*., 1989, cited in Anderson *et al*., 2014: 1299). Bledow *et al*. (2009b: 367) who argued that innovation does not solely follow stochastic mechanisms, described this "messy" process of innovation as individuals running through ongoing cycles of generating ideas and taking action to implement ideas. According to Bledow *et al*. (2009b: 367), ideas are not only an initial input to action but also a consequence of action, and by acting, individuals create new situations from which additional ideas can be developed.

Leeuwis and Aarts (2011: 23) described the non-linearity of innovation as: "…change is often affected by complex interdependencies, unintended and unforeseen developments and interactions, coincidence and dynamics of conflicts that defy engineering and reductionist understanding".

Fagerberg (2003: 19) built a strong argument against a linear model of innovation based on differentiating innovation into two separate stages. According to Fagerberg (2003), a linear model does not hold due to the following reasons: It is based on the assumption that innovation is applied science, which it is not; linearity assumes that there is a well-defined set of stages, a so-called "chain of causation" that innovation is assumed to go through, and this is true for only a minority of innovations; and the linear model ignores the many feedbacks and loops that occur between the different "stages" of the process.

More arguments supporting an interaction of idea generation and idea implementation are listed in Table 2.7 below.

Table 2.7: Arguments supporting an interaction of idea generation and idea implementation

Theme	Argument
Ideas in implementation stage	West (2002: 378) argued that useful ideas will also be demanded during the innovation implementation process since unanticipated problems are likely to demand yet more novel ideas to aid in their solution.
Inter-linking sequences	Egbu (2004: 305) claimed that innovation must be viewed as a process of inter-linking sequences from idea generation to idea exploitation that are not bound by definitional margins and are subject to change.
Innovation is situation dependent	Hyland and Beckett (2005: 345) suggested that the "how it is done" of innovation is highly situation dependent. They used the example of the circumstances of an entrepreneurial start-up that will be much different from those of an established multi-national company.
Integration of concepts in research	In the most recent state-of-the-science review on innovation, Anderson *et al*. (2014: 1317) – in their discussion of directions for future research – commented that the subfields of idea generation and idea implementation remain determinedly disconnected from one another and they appealed for these two disparate subfields to become more integrated in future research.

Source: Author's own.

In summary, although there is certainly value in recognising that innovation is differentiated in idea generation and idea implementation, and that each of these concepts is influenced by different factors (Baer, 2012: 1102), in the reality of innovation happening in an organisation, the distinction between the two phases is not always clear-cut. For that reason, the viewpoint taken for this study was that the process from generating an idea to implementing the idea does not always follow a predictable, linear path, and there are no clear boundaries or a fixed order of idea generation- and implementation activities. Hence, innovation was adopted as a holistic concept – a function of the behaviours of people engaging in the activities of generating and implementing ideas in the organisational context.

2.3.3 Individual innovative behaviour

This study involved gaining more insight into how individuals can improve the odds of successfully realising their potentially useful ideas in an organisation. Anderson *et al.* (2014: 1299) acknowledged that when examining innovation or "idea implementation" at the individual level of analysis, researchers have also used the term "role innovation" and "individual innovative behaviour" (IIB).

The concept of IIB is similar to the approach taken for this study, i.e. that the individual is the source of innovation, innovation consists of a recursive interaction between idea generation and taking action, and it is only innovation per definition if implementation of an idea has taken place. Therefore, the concept of IIB is now discussed in more detail.

A number of studies have defined and investigated the construct of IIB, as indicated in Table 2.8 below.

Table 2.8: List of studies that have defined and investigated the construct of IIB

Reference	Feature
Scott & Bruce, 1994	Scott and Bruce (1994: 582) viewed innovation as a multistage process, with different activities and different individual behaviours at each stage. The stages are not necessarily discrete or sequential, the activities are discontinuous and individuals can be expected to be involved in any combination of these behaviours at any one time.
	Scott and Bruce (1994: 581) furthermore described IIB as beginning with problem recognition and the generation of ideas or solutions, either novel or adopted. The innovative individual will have to seek sponsorship for an idea and attempt to build a coalition of supporters for it. Finally, the idea is completed by producing a prototype or model of the innovation that can be touched or experienced, and that can further be diffused, mass-produced, turned to productive use, or institutionalised.
	The study of Scott and Bruce (1994: 580) investigated what motivates or enables IIB and they hypothesised that leadership, individual problem-solving style, and work group relations affect innovative behaviour directly and indirectly through their influence on perceptions of the climate for innovation.
Kleysen & Street, 2001	Kleysen and Street (2001: 284) developed and tested a multi-dimensional measure for IIB and defined IIB as: “Individual actions directed at the generation, introduction and or application of beneficial novelty at any level of the organization”. Kleysen and Street (2001: 285) derived the following factors to best categorise behaviours associated with individual innovation: opportunity exploration, generativity, formative investigation, championing and application.
De Jong & Den Hartog, 2010	De Jong and Den Hartog (2010: 23) referred to IIB as “Individual Work Behaviour” and accordingly used the following definition of Farr and Ford (1990, cited in De Jong & Den Hartog, 2010: 24) to describe it: “…an individual’s behaviour that aims to achieve the initiation and intentional introduction (within a work role, group or organization) of new and useful ideas, processes, products or procedures”. De Jong and Den Hartog also specifically pointed out that IIB defers from idea generation (creativity) because it also includes the implementation of ideas and unlike creativity, IIB has an applied component and is explicitly intended to provide an output with some kind of perceived benefit. De Jong and Den Hartog (2010: 24) distinguished four dimensions of IIB, namely idea exploration, idea generation, idea championing, and idea implementation.

Reference	Feature
Yuan & Woodman, 2010	Yuan and Woodman (2010: 324) defined IIB as an employee's purposeful introduction or application of new ideas, products, processes, and procedures to their work role, work unit, or organisation. Yuan and Woodman (2010: 324) also concluded that examples of such behaviour include searching out new technologies, suggesting new ways to achieve objectives, applying new work methods, and investigating and securing resources to implement new ideas.
	The objective of the study of Yuan and Woodman (2010: 323) was to investigate why employees engage in innovative behaviour at their workplaces. More specifically, Yuan and Woodman (2010: 323) examined how employees' innovative behaviour is explained by expectations for such behaviour to affect job performance (expected positive performance outcomes) and image inside their organisations (expected image risks and expected image gains).

Source: Author's own.

Based on the definitions and explanations of the studies above, IIB is conceptualised as multifaceted behaviour, which encompasses a broad set of activities aimed at the generation of ideas, creating support for them, and helping their implementation. "Implementation" in this context is for now taken as bringing forth an output with some kind of perceived benefit (Linton, 2002: 65; Flynn *et al*., 2003: 417; Rothberg, 2004: 1060, Voss, 1992: 30). Figure 2.3 below provides a graphical representation of the conceptualisation of innovation as IIB.

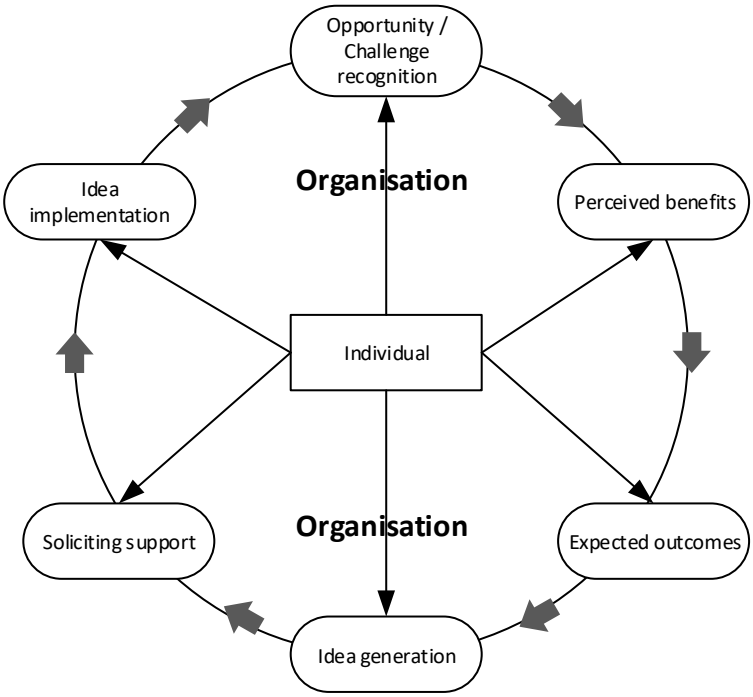

Figure 2.3: Conceptualisation of IIB

Source: Author's own.

Lastly, it is evident in the literature that researchers have investigated why employees engage in IIB at their workplaces, identified the dimensions of IIB, investigated some of the factors which could possibly influence IIB directly and indirectly, and properly investigated the measurement of IIB (Scott & Bruce, 1994; Yuan & Woodman, 2010; Kleysen & Street, 2001; De Jong & Den Hartog, 2010). Thus, it appears that IIB is justifiably accepted in the innovation literature as a representative construct of innovative behaviour by individuals.

2.3.4 Innovation type and degree

It was confirmed above that "type" and "degree" are also two dimensions of innovation that feature prominently in the literature (Wolfe, 1994; Anderson *et al*., 2004; Crossan & Apaydin, 2010; Anderson *et al.,* 2014; Baregheh *et al*., 2009: 1331). The type of innovation refers to the "kind" of innovation, meaning the type of output or the result of innovation, e.g. product, service or process (Baregheh *et al*., 2009: 1323). The degree of innovation refers to the degree of newness or change that constitutes an innovation (Johannessen, Olsen & Lumpkin, 2001: 21), and ranges from incremental to radical (Tushman & Romanelli, 1985). Da Silva and Oldham (2012: 134) defined "radicalness" as the degree to which the ideas were breakthrough or groundbreaking. However, the differentiation regarding the degree of innovation is not always clear (Koberg *et al*., 2003: 35). Corso and Pellegrini (2007: 337) also went into more depth on this topic, pointing out that the distinctive characteristics that are used to differentiate between incremental and radical innovation are:

- the type of change;
- the frequency of change;
- the type of knowledge involved in the change; and
- the degree of workforce participation and scope of the innovation base in the organisation.

The impact of these two dimensions in the context of this study was briefly positioned, following with the approach that the researcher took to contend with this impact.

Innovation can take on many pathways in an organisation. Most innovations simply build on what is already there, requiring modifications to existing functions and practices, but some innovations change the entire order of things, making obsolete the old ways (Koberg *et al*., 2003: 35). The impact of the type and degree of innovation in the context of this study, is that the innovation – depending on the type and degree of innovation – will take different pathways of implementation in the organisation. The effects of different paths of implementation, based on the type and degree of innovation, have been well documented (Dong *et al*., 2008; Daft, 1978; Damanpour & Gopalakrishnan, 1998; Magadley & Birdi, 2012; Sawang & Unsworth, 2011).

Dong *et al*. (2008) distinguished between administrative innovations (i.e. technologies or practices that are related to management) and technical innovations (i.e. new products or services that are related to the primary work activity of the organisation), and found that these two types of innovations imply potentially different decision-making processes (Damanpour & Gopalakrishnan, 1998: 6), and thus their implementation is affected by potentially different sets of factors.

Daft (1978) theorised a "dual-core model" of organisational innovation. Daft (1978: 195) then reasoned that innovative ideas follow different paths from conception to approval and implementation. Administrative ideas would originate near the top of the hierarchy and trickle down (Daft, 1978: 195), i.e. a top-down process (Damanpour & Gopalakrishnan, 1998: 6). Technical innovations would originate near the bottom of the hierarchy and trickle up (Daft, 1978: 195), i.e. a bottom-up process (Damanpour & Gopalakrishnan, 1998: 8).

So, the degree and type of innovation will determine whether the individual can affect the change in their own capacity or whether they would require the assistance of other resources (people) in the organisation, in which they will have to engage in implementation activities that are focused on getting the required support.

A case in point is the study of Da Silva and Oldham (2012: 135) which found that radical ideas are likely to receive significant resistance from decision-makers in the organisation and the acceptance and implementation of these ideas may require the employee who generated them to engage in activities that neutralise or counteract that resistance. By contrast, the authors found that ideas that are less radical are met with less resistance, and since such ideas represent relatively minor refinements to existing ways of doing things, they are less likely to challenge present procedures in the organisation and often may be accommodated within the organisation's existing structures.

It was stated above that there is an argument to be made for innovative ideas following different paths from conception to implementation based on the type and degree of the innovation, but the kind of innovation that was investigated in this study falls in the category of an incremental degree and of the process type, i.e. simply building on what is already there, requiring modifications to existing functions and practices, and not the kind of innovations that change the entire order of things (Koberg *et al*., 2003: 35). Process innovation, is in general understood as changes in the way work is carried out in organisations and is deemed relevant to negotiate the challenges of cost containment, and efficiency- and quality improvements (Piening, 2011: 130). The reasons for this decision are that process innovations are fairly common in organisations (as most employees are usually exposed to some or other organisational process), and therefore they would generally be fairly easy to implement, and process innovation can be advantageous to the organisation (Lages & Piercy, 2012: 215; Kettinger, Teng & Guha, 1997: 55, Voss, 1992: 33), making it a copious innovation to find and study in organisations.

2.3.5 Summary of theoretical scope for the study

A multilevel approach was taken for this study, i.e. a focus on both the individual and organisational levels of analysis, with the individual as the source of innovation; and also with innovation as transpiring within the social context of the organisation. In addition, concerning the process of innovation, this study includes the generation and implementation of ideas in a single concept, viewed as an individual's innovative behaviour (De Jong & Den Hartog, 2010: 23); and will work from the premise that idea generation and implementation activities follow a cyclical, recursive process (Anderson *et al*., 2014: 1299; Bledow *et al.,* 2009b: 367).

Based on the view that the individual is the source of innovation within the context of the organisation, and the fact that innovation is taken as a holistic construct in the form of a recursive interaction of idea generation and idea implementation activities, the concept of IIB was defined to embody the construct of an individual implementing a potentially useful idea in the organisation, thereby effecting innovation. Concerning the type and degree of innovation, process innovation of the incremental type was investigated for this study.

The scope for this study concerning the typical categorisations applicable to innovation research has now been presented (i.e. level of analysis, innovation process, type and degree). The concepts and constructs relevant to individuals implementing ideas in the context of the organisation are reviewed in the next section.

2.4 THEORY ON CONSTRUCTS RELEVANT FOR INDIVIDUAL INNOVATIVE BEHAVIOUR

2.4.1 Introduction

The aim of this research was to gain more insight into how individuals can improve the chances of successfully implementing their potentially useful ideas in an organisation. The behaviour of individuals concerning the implementation of a potentially useful idea in the organisation was taken as IIB for this study.

In order to more fully comprehend what influences individuals to implement their potentially useful ideas in an organisation, firstly the concepts of "idea generation" and "implementation" in the context of innovation are reviewed in this section; then an overview is given of how implementation has been studied by other researchers; and lastly, the factors that influence IIB are reviewed.

2.4.2 Idea generation

In this section, the significance of ideas in the context of organisational innovation is addressed, followed by a review of the definition of an "idea" and where the demand for ideas comes from. An overview is given firstly on how ideas are generated, whilst pointing out that an individual can generate an idea on their own, but most of the time the implementation of ideas in an organisation

is a collective undertaking. Lastly, it is argued that the generation of an idea is not a discrete activity, but forms an integral part of IIB.

Ideas are essential because the ability of an organisation to grow is dependent upon its ability to generate new ideas and to exploit them effectively for their long-term benefit to the organisation (Flynn *et al*., 2003: 417; Rothberg, 2004: 1060). Many authors view idea generation as the starting point of innovation (Amabile, 1983: 365; Mumford, 2000: 314; Andriopoulos, 2001: 834; Egan, 2005: 162; McAdam & McClelland, 2002: 87; Shalley *et al*., 2004: 934).

An "idea" is defined by the Oxford Dictionary as a "thought or suggestion as to a possible course of action" (Oxford Dictionary, 2011). Rothberg (2004: 1060) defined an idea as "an object of thought", and also pointed out that an idea is intangible and thus an idea cannot be seen, but it can be represented, discussed and symbolised. Ideas are also not necessarily time bound, and can be useful either in the short or the long term (Baer, 2012: 1102). Noteworthy for this study, is the view of Rothberg (2004: 1060) who maintained that an idea "interacts" with existing ways of doing things, existing mindsets and existing processes. This is aligned to the approach of this study which views ideas not only an initial input to action but also a consequence of action.

Concerning where the demand for ideas derives from, Sadler explained that ideas can originate either as a proactive action to exploit a new opportunity or as a reaction to a certain situation (Sadler, 1995, cited in Flynn *et al*., 2003: 419). Damanpour, Walker and Avellaneda (2009: 652) concluded that in the context of organisational innovation, a new idea can apply to a new product, service or market, and to operational and administrative structures, processes and systems. Since this study focuses on organisational innovation, the perspective of Hirst *et al*. (2009: 281) is particularly relevant, as they maintained that the generation of novel ideas at work is a process that is typically bound by practical restraints, and often motivated by problems and challenges that arise in the pursuit of work objectives. Accordingly, the study of Hirst *et al*. (2009) focused on idea generation as a process in which employees develop novel and useful solutions to challenges and problems encountered in pursuit of work objectives.

Sheu and Lee (2011: 847) listed three ways in which ideas can be created:

> "(1) A flash of genius: it occurs to the innovator with a flash of genius, sometimes accidental. It is, however, a very random and scarce happening and not a primary source of an innovative problem solving approach.
>
> (2) Empiric path: this approach attacks problems by brainstorming or trial-and-error approaches. It fails to cover all possible situations for an optimal solution and it is highly dependent on luck.

(3) Methodical path: a systematic process is used to reveal the total solution space. It converges to an optimal solution by systematic analysis".

Van de Ven *et al*. (1989: 105) suggested that ideas can originate from "a recombination of old ideas, a schema that challenges the present order, or a formula or unique approach that is perceived as new by the individuals involved".

Innovation scholars have also pointed out that while the conception of useful ideas may be an individual activity, implementing new ideas in an organisational context is a collective undertaking, as individuals have to gather feedback on their ideas, involve others in selecting the best ideas, gain support for their ideas and solicit resources to transform their ideas into an output with some kind of perceived benefit (Scott & Bruce, 1994: 586; Axtell *et al*., 2000: 269; Baer, 2012: 1103).

Scott and Bruce (1994: 580) stated that they view ideas as the "foundation" of innovation, and in the light of IIB argued that it is people who "develop, carry, react to, and modify ideas" (Van de Ven, 1986: 592). Yuan and Woodman (2010: 323) referred to the act of generating ideas as a component of innovative behaviour. Based on the definition that was given for IIB in Section 2.3.3 and supported by a number of researchers (Van de Ven, 1986; Scott & Bruce, 1994; Kleysen & Street, 2001; Yuan & Woodman, 2010, De Jong & Den Hartog, 2010), it is evident that idea generation is an integral part of IIB.

Finally, based on the examples provided above, it is argued that idea generation is not a discrete, once off activity in innovation. Rather, idea generation is seen as reiterative in the context of IIB and consequently innovation. Ford (1996: 1113) stressed that ideas can influence processes and outcomes across phases of the innovation process and can solve dilemmas that arise throughout the innovation process. Ideas are not only an input to action, but also a consequence of action (Bledow *et al*., 2009b: 367; Scott & Bruce, 1994: 581; Anderson *et al*., 2014: 1299; West, 2002: 378).

The definition of an idea has been established, and also where the demand for ideas originate from, how ideas are generated, and the role of ideas in IIB. The next concept to consider is thus the "implementation" of ideas.

2.4.3 Idea implementation

The concept of IIB and the role of idea generation within the context of IIB has been dealt with, and this section examines the concept of "implementation". Firstly, a review is given of how implementation has been defined in the literature, next the processes and activities of implementation in the context of innovation are discussed, followed by an interpretation of when implementation is regarded as having been successfully completed. Lastly, a view is given of how implementation relates to the construct of IIB in this study.

Implementation is generally seen as the process of converting ideas into new or improved products, processes, or ways of doing things (e.g. Kanter, 1988; West, 2002; Woodman, Sawyer & Griffin, 1993, cited in Baer, 2012: 1102).

Klein and Sorra (1996: 1055) stated that they view implementation as being successful within an organisation if targeted employees "appropriately and committedly" use the innovation, and implementation failure occurs when employees use the innovation "less frequently, less consistently, or less assiduously" than required for the potential benefits of the innovation to be realised for implementation.

Voss (1992: 30) proposed two levels of success in implementation, namely (1) technical success, and (2) realisation of benefits, which Voss (1992: 30) referred to as "business success".

Linton (2002) did a comprehensive review of the implementation literature in order to more fully comprehend the implementation process. Based on this review, Linton (2002: 67) outlined various indicators of implementation success in the existing literature, and concluded that no consensus exists on the definition or measurement of implementation success. Linton (2002: 67) also claimed that implementation success is multidimensional and many of its aspects are not generalisable to all innovations.

Ultimately, Linton (2002: 67) listed four categories of implementation outcomes proposed by O'Connor, Parsons, Liden and Herold (1990, cited in Linton, 2002: 67), which are relevant to determining whether an innovation has been successfully implemented. The following are these four categories of implementation outcomes, including a corresponding evaluation question for each one:

1. Implementation, integration, and institutionalisation: Has the innovation changed how work is performed?
2. Human partnership dynamics: Does the innovation change the nature of the organisation's structure or employee interaction with work?
3. Economic performance: How does the innovation perform in quantifiable economic terms?
4. Operational effectiveness: Does the innovation improve the operation in a manner which cannot be easily quantified?

Although these categories and questions are useful for determining implementation success, Linton (2002: 68) acknowledged that it is difficult to find methods – which are not simplistic or unreliable – for answering these questions.

Linton (2002: 69) ultimately concluded that three measures of success of the implementation process appear satisfactory and widely applicable to implementation research, namely:

routinisation verifies that the implementation process is over and that the outcome is acceptable to the organisation; *incorporation* measures the effectiveness of the implementation process in extracting the potential benefits from the innovation; and the *time* required to implement an innovation measures the efficiency of the implementation process.

Hence, routinisation, incorporation, and time to implement can be used widely as success measures of implementation (Linton, 2002: 69).

Relating to time to implement an idea, the statement was made above that ideas are not time bound, and can be useful either in the short or the long term (Baer, 2012: 1102). It was pointed out in Section 2.3.4 that depending on the type and degree of innovation, the actual route taken with implementation could differ. Based on the above two arguments, the researcher is of the opinion that time to implement will not make a good measure for implementation success. In the researcher's view, an implementation can be more or less efficient, but this does not make an implementation more or less successful.

To summarise, for the sake of this study the same approach was taken for implementation as with idea generation in the context of IIB. This implies that implementation is not seen as a discrete activity within innovation, and it is not only viewed as the actions taken after a decision has been made to adopt the innovation and the required support has been gained. Rather, it is also taken as being reiterative in the context of IIB (and consequently innovation), and the following activities are also seen as being part of implementation:

- Problem or opportunity recognition;
- Evaluating ideas;
- Selecting ideas;
- Gaining sponsorship and support for ideas; and
- Assisting with the realisation of ideas so that they can be touched or experienced, and then be diffused, produced, turned to productive use, or institutionalised (Kanter, 1988: 191, cited in Scott & Bruce, 1994: 582).

To paraphrase Bledow *et al*. (2009b: 367) regarding the reiterative nature of idea generation in IIB: Implementation activities are not only an output of ideas, but also a requisite of getting ideas into an actionable state.

An overview was given on the constructs of idea generation and implementation, and the construct of IIB is reviewed in the next section.

2.4.4 The nature of individual innovative behaviour in the context of an organisation

In Section 2.3.3, IIB was conceptualised as multifaceted behaviour, which encompasses a broad set of activities related to the generation of ideas, creating support for them, and helping their implementation. In this section, the particular characteristics and dimensions of IIB are discussed in more detail with the purpose of highlighting the key attributes of IIB as revealed in the literature.

The following attributes have featured prominently in the literature on IIB:

2.4.4.1 Non-routine behaviour

The theories and models that were reviewed in order to gain insight into how and why individuals take action on potentially useful ideas in the organisation, had strong arguments regarding innovative behaviour being different from routine behaviour (Sproull & Hofmeister, 1986: 44; Ford, 1996: 1116). This is to be expected since most definitions of innovation signify a concept of newness or novelty (Baregheh *et al*., 2009: 1334). Sproull and Hofmeister (1986: 44) also pointed out that doing something new and different entails substantial mental activity and effort.

2.4.4.2 Complexity

Innovation has been described in this study as a complex phenomenon possessing features which cross the levels of analysis between individuals, work groups, and organisations, and involves complex interaction between the individual and the work situation at different levels of the organisation (Anderson *et al*., 2004: 161).

Fidler and Johnson (1984: 706) described complexity concerning innovation as: "…the number of dimensions along which an innovation can be evaluated by a potential receiver" and view it as an inherent characteristic of innovation. Fidler and Johnson (1984: 706) also theorised that the greater the complexity related to using or understanding an innovation, the more slowly it tends to be adopted.

The complex nature of innovation behaviour has been confirmed by many studies (Tabak & Barr, 1996: 389; Ford, 1996: 1117; Woodman *et al*., 1993: 293; Taylor & McAdam, 2004: 33; Anderson *et al*., 2014: 1300).

2.4.4.3 Risky

It has been established that innovation activities involve non-routine behaviour (Ford, 1996; 1116). Deviating from the norm in order to change the status quo is a risky endeavour, since the outcomes of these engagements are uncertain or difficult to predict (Yuan & Woodman, 2010: 323; Alexander & Van Knippenberg, 2014: 425). In fact, the greater the uncertainty of outcome regarding an innovation, the greater the degree of perceived risk of implementing the innovation (Fidler & Johnson, 1984: 705).

The risky work behaviours of engaging in innovation activities may lead to unintended costs for the innovators involved, despite their intention to produce anticipated benefits (Janssen *et al*., 2004: 130); and could also lead to damage in image and reputation in the organisation (Yuan & Woodman, 2010: 324).

The risk involved in innovative behaviour has been well documented in the literature (Fidler & Johnson, 1984; Yuan & Woodman, 2010; Alexander & Van Knippenberg, 2014; Jansen *et al*., 2004; Gong, Zhou & Chang, 2013).

2.4.4.4 Social context

IIB concerning the realisation of ideas does not happen in isolation. In the organisational context, individuals cannot innovate on their own but require buy-in, support and assistance from other resources in the organisation to realise the perceived benefits of their ideas (Axtell *et al.*, 2000: 269; Baer, 2012: 1103; Daniels *et al*., 2011: 584). The social element of IIB was prominent in the three studies which investigated IIB (Scott & Bruce, 1994; Yuan & Woodman, 2010; Baer, 2012). The model of Scott and Bruce (1994: 580) was based on the social-interactionist approach; the model of Yuan and Woodman (2010: 325) was based, among others, on the social-political perspective; and Baer (2012: 1107) found a positive link between IIB and the ability to cultivate and use social networks. Therefore, the social environment and social interaction in the organisation make up an important element of IIB.

2.4.4.5 Political context

In conjunction with the social element, a number of studies have also referred to the political dimensions of innovation (Seibert *et al*., 2001; Frese & Fay, 2001, both cited in Daniels *et al*., 2011: 584; Egbu, 2004: 305; Baer, 2012: 1102; Van de Ven, 1986; Nayak, 2008: 423), and some studies specifically investigated variables related to the political nature of innovation (Yuan & Woodman, 2010; Frost & Egri, 1991).

The influence of organisational politics on innovative behaviour is also to be expected because a decision to allocate resources often involves multiple stakeholders who are likely to disagree about the value of an idea, and this process is open to social-political manoeuvres, and sponsorship and advocacy are natural mechanisms for influencing decisions in such circumstances (Green *et al*., 2003: 421). As Kanter (1988: 186) duly noted, “The features of successful ideas have more to do with the likelihood of gathering political support than with the likelihood of the idea to produce results”.

In conclusion, all the mentioned attributes associated with IIB, point to the fact that IIB is indeed a challenging endeavour, an observation that features prominently in the literature (Hammond *et al*.,

2011: 99; Ohly & Fritz, 2010: 558; Hirst *et al*., 2009: 281; Alexander & Van Knippenberg, 2014: 423; West, 2002: 380; Nayak, 2008: 423).

In the next section, a review is given on how innovation implementation has been studied in the literature.

2.4.5 Innovation implementation theory in the literature

The aim of this research was to gain more insight into how individuals can improve the chances of successfully implementing their potentially useful ideas in an organisation.

Although the approach taken for this study was that the individual is the source of innovation and consequently IIB as the "mechanism" for implementation, the researcher reviewed the literature on innovation implementation as well, as it formed part of the knowledge base for this study.

Firstly, attention is brought to the fact that innovation implementation was not researched as much as other aspects of innovation, and furthermore, that research on innovation implementation was mostly directed at large-scale innovations investigating organisational factors only. This is followed by a concise review of the influential models in the literature related to innovation implementation, as well as the evolution they underwent, and lastly the case is made for the implementation climate being an important factor in innovation implementation as well as for the neglect of investigating individual behaviours in innovation implementation research.

Studies that specifically focus on innovation implementation are scarce (Sproull & Hofmeister, 1986: 43; Klein & Sorra, 1996: 1056; Klein *et al*., 2001: 821; Linton, 2002: 67; Piening, 2011: 128). Sproull and Hofmeister (1986: 43) already noted in 1986 that implementation has not received the same attention from theorists as "decision making" and also found that previous research has ignored the cognitive aspects of implementation.

Sproull and Hofmeister (1986: 44) listed two reasons for this oversight on cognitive processes related to implementation. Firstly, that many studies of implementation focused on innovations about which there is little ambiguity and which require little mental effort, explaining that these studies included implementation into the utilisation stage of innovation and therefore these studies implied that the innovation to be used is a well-understood entity and that these innovations have a concreteness and quantifiability, uncharacteristic of managerial innovations. Secondly, that it is common practice of analytically separating implementation from formulation and decision making.

Klein and Sorra (1996) also noted that cross-organisational studies on innovation implementation are rare and that single-site, qualitative case studies of innovation are more common. Klein and Sorra (1996: 1056) further commented that these studies describe "pieces of the innovation story",

but concluded that integrative models that capture and clarify the multi-determined, multilevel phenomenon of innovation implementation are largely missing.

Piening (2011: 128) found that existing research has typically treated innovation implementation processes as a “black box”, and compared the knowledge about innovation implementation to cooking with a list of ingredients but without a recipe: “There are many studies that shed light on the ingredients, that is, factors that support or impede implementation processes such as organisational structures, but we need more research on how the ingredients are combined to achieve specific outcomes”.

Based on the researcher’s review of the literature, it seems that it is mostly still the case that research on innovation implementation has not received the same amount of attention from researchers as other elements of innovation have, e.g. idea generation, innovation culture, economic issues, etc. (Sproull & Hofmeister, 1986: 43; Klein & Sorra, 1996: 1056; Klein *et al*., 2001: 821; Linton, 2002: 67; Piening, 2011: 128).

One of the most authoritative and referenced authors on the subject of implementation in the context of innovation is Katherine Klein. As the models on innovation implementation of Klein and Sorra (1996) and Klein *et al*. (2001) have been the yardstick for research in the area of innovation implementation, the literature on implementation was reviewed based on the studies of Klein *et al*. (2001) and Klein and Sorra (1996) and other studies that tested and verified, or contradicted the work of Klein *et al*. (2001) and Klein and Sorra (1996). The article in which the first model appeared (Klein & Sorra, 1996) has been cited extensively and the model and theory of Klein and Sorra (1996) is especially popular in health- and human services research related to innovation implementation (Weiner, Belden, Bergmire & Johnston, 2011: 1).

Klein and Sorra (1996: 1059) pointed out that the research on implementation (at that stage) was mainly qualitative, single-site studies and that each of these implementation case studies highlighted a different subset of one or more implementation policies and practices. Furthermore, they added that no overarching conclusion could be reached regarding implementation if multiple authors, studying multiple organisations, identified different sources of implementation failure and success. Klein and Sorra (1996: 1059) addressed this issue by introducing the construct of an organisation's climate for implementation to reflect an organisation’s multiple implementation policies and practices. A schematic representation of Klein and Sorra’s model is displayed in Figure 2.4 below.

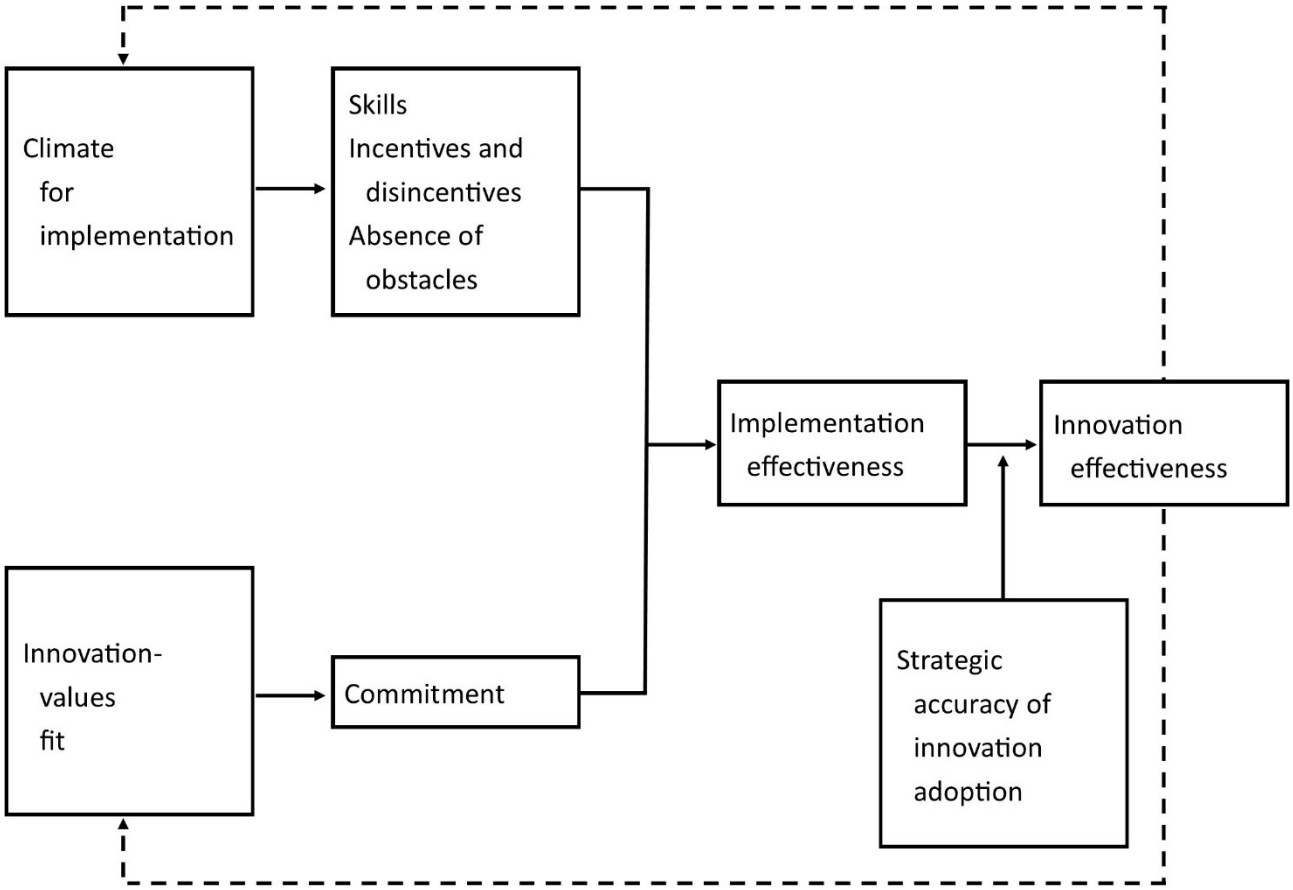

Figure 2.4: Determinants and consequences of implementation effectiveness

Source: Klein and Sorra, 1996: 1056.

Klein and Sorra (1996: 1055) theorised that implementation effectiveness is a function of the strength of an organisation's climate for the implementation of that innovation; and also a function of the fit of that innovation to targeted users' values. They defined "implementation effectiveness" as: "the quality and consistency of targeted organizational members' use of an adopted innovation" (Klein & Sorra, 1996: 1056). They also theorised that implementation effectiveness is a necessary but not sufficient condition for "innovation effectiveness" (Klein & Sorra, 1996: 1058). Furthermore, Klein and Sorra (1996: 1058) defined "innovation effectiveness" as: "the benefits an organization receives as a result of its implementation of a given innovation". Consequently, in the conceptualisation of IIB for this study, the realisation of benefits is related to implementation, and Klein and Sorra (1996: 1058) related the realisation of benefits to innovation effectiveness, which is viewed as an output of implementation effectiveness, supporting the case that IIB and innovation implementation essentially have the same meaning.

The construct of the organisation's climate for implementation of Klein and Sorra (1996) was built on Schneider's conceptualisation of climate. Schneider defined climate as: "employees' perceptions of the events, practices, and procedures and the kinds of behaviors that are rewarded, supported, and expected in a setting" (Schneider, 1990: 384, cited in Klein & Sorra, 1996: 1060).

Klein and Sorra (1996: 1060) highlighted three distinctive features of Schneider's conceptualisation: First, it underlines employees' perceptions – not their evaluations – of their work environment. Second, it draws attention to employees' shared perceptions, not employees' individual and idiosyncratic views. And third, it focuses on employees' shared perceptions of the extent to which work unit practices, procedures, and rewards promote behaviours consistent with a specific strategic outcome of interest.

Hence, the organisation's climate for the implementation of a given innovation is defined by Klein and Sorra (1996: 1060) as: "….targeted employees' shared summary perceptions of the extent to which their use of a specific innovation is rewarded, supported, and expected within their organization" and it is the result of "…employees' shared experiences and observations of, and their information and discussions about, their organization's implementation policies and practices". Klein and Sorra (1996: 1060) also accentuated that the climate for implementation construct does not refer to "employees' satisfaction with the innovation, the organization, or their jobs; it also does not refer to employees' perceptions of their organization's openness to change or general innovativeness".

Klein and Sorra (1996: 1074) emphasised that the primary antecedent of an organisation's climate for implementation is managers' support for implementation of the innovation (Angle & Van de Ven, 1989; Beer, 1988; Leonard-Barton & Krauss, 1985; Nadler & Tushman, 1989; Nutt, 1986, all cited in Klein & Sorra, 1996: 1074). However, in contrast, Klein and Sorra (1996) also questioned why managers then fail to support the implementation of many of the innovations adopted in their organisations. Subsequently, Klein and Sorra (1996: 1074) listed two possible answers which the literature at that time revealed on the matter. Firstly, it is because lower level managers are not included in the innovation adoption decisions, as these decisions are usually taken by executives. Being left out of the innovation adoption decision, managers do not feel compelled to create a strong climate for implementation. Secondly, managers who are not knowledgeable about an innovation are likely to hand down implementation efforts to subordinates who have more know-how, but who lack the authority and resources to create a strong climate for implementation. Klein and Sorra (1996: 1074) then described the given explanations (for managers' failure to support innovation) as "tentative and preliminary" and called for further empirical and conceptual analysis.

Subsequent to the above argument, Klein and Sorra (1996: 1074) addressed the issue of "upward implementation". They posed the question: "are non-managers powerless to affect their organization's implementation climate?" and concluded that they know of no research explicitly designed to answer this question. Klein and Sorra speculated that non-managers have relatively little influence in creating a strong implementation climate and they based this reasoning on the fact that even though non-managers can advocate, or champion, their managers' adoption of a given innovation (Dean, 1987; Howell & Higgins, 1990, both cited in Klein & Sorra, 1996: 1074),

they lack the authority and resources to institute the policies and practices that yield a strong implementation climate. Klein and Sorra (1996: 1074) expressed their belief that as organisations strive to become more innovative, the role of non-managers in fostering implementation becomes an increasingly important topic for research.

Taylor and McAdam (2004) did a comprehensive review of the determinants which have a positive impact on innovation adoption and implementation. They critically assessed the model of Klein and Sorra (1996) and argued that implementation effectiveness is the consequence of more than mere climate and innovation values fit – as theorised by Klein and Sorra (1996).

Taylor and McAdam (2004: 33) asserted that implementation effectiveness goes beyond "absence of obstacles" and is not simply a "homogenous construct". They argued that implementation effectiveness is the result of a "complex construct of inextricably multi-layered iteration" (Taylor & McAdam, 2004: 33). They then constructed an "upgraded" version of Klein and Sorra's (1996) model, which shows how the complexity of the dual antecedents and the innovation process itself, along with the innovation fit, combines to ensure enhanced innovation implementation effectiveness, as shown in Figure 2.5 below.

Taylor and McAdam (2004: 33) further explained that in isolation, the individual elements have little impact. However, together the innovative implementation effectiveness is greater than the sum of its parts. Activity in each element or part of the framework is continuous and ongoing related with learning, development and change. Taylor and McAdam (2004: 33) referred to this phenomenon as: "Individual and organizational learning ebb and flow, gathering momentum towards enhanced implementation effectiveness". This view of Taylor and McAdam (2004: 33) resonates with the interactionist approach (Anderson *et al*., 2014: 1300) taken for this study, i.e. the individual interacting in the organisational context, and also with the cyclical, recursive nature of idea generation and idea implementation, taken as IIB for this study.

Two key aspects emerge from Taylor and McAdam's (2004) modification of Klein and Sorra's (1996) model. Firstly, the dynamism of continual improvement, essential for innovation implementation effectiveness (Taylor and McAdam pointed out that the limitations of a two-dimensional diagram belie the nature and extent of the dynamism their model presents). Secondly, their framework extends the literature to include empirical evidence of organisational change, which was argued as being an integral part of innovation.

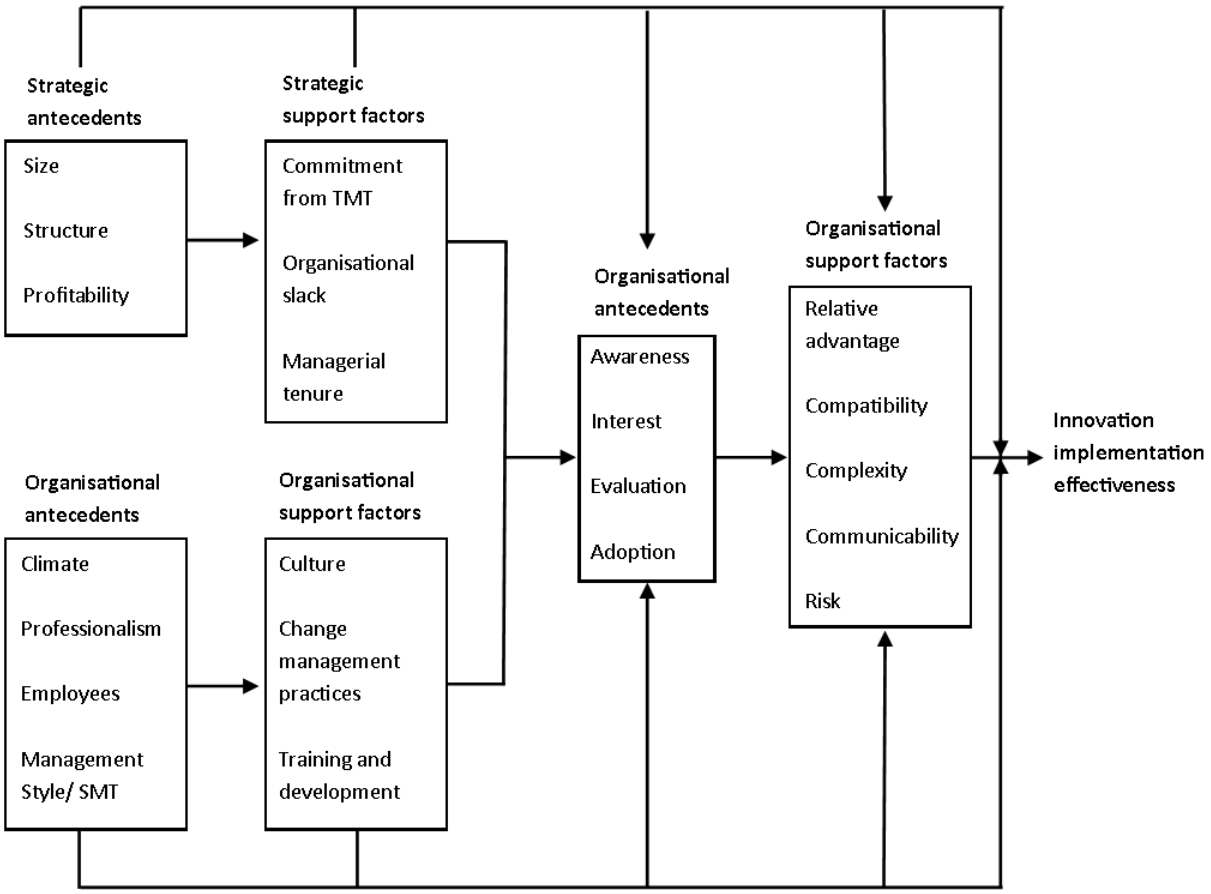

Figure 2.5: Innovation implementation effectiveness framework

Source: Taylor and McAdam, 2004: 34.

In conclusion, Taylor and McAdam (2004: 36) also requested that innovation management must be extended to a broader context where there are opportunities for employees at all levels and in all areas to get involved and make meaningful contributions.

Another key contribution concerning research on innovation implementation was made by Klein *et al*. (2001). Klein *et al.* (2001) investigated why some organisations succeed and others fail in implementing the innovations they adopt. This study of Klein *et al*. (2001) has also received considerable attention in academic circles, including a number of empirical papers that applied or modified specific aspects of their final model (Sawang & Unsworth, 2011: 990). Klein *et al*. (2001: 821) also noted that innovation implementation has been the object of little research and found that research on innovation adoption dominates the innovation literature.

The study of Klein *et al*. (2001: 811) investigated the implementation of an advanced computerised manufacturing technology, and the results suggest that financial resource availability and management support for technology implementation engender high-quality implementation policies and practices and a strong climate for implementation, which in turn fosters implementation effectiveness. The constructs of “climate for implementation” and “implementation effectiveness” were originally formulated by Klein and Sorra (1996). The hypothesised predictors of

implementation effectiveness (innovation use) and innovation effectiveness (benefits of innovation implementation) of the study by Klein *et al*. (2001) are displayed in Figure 2.6 below.

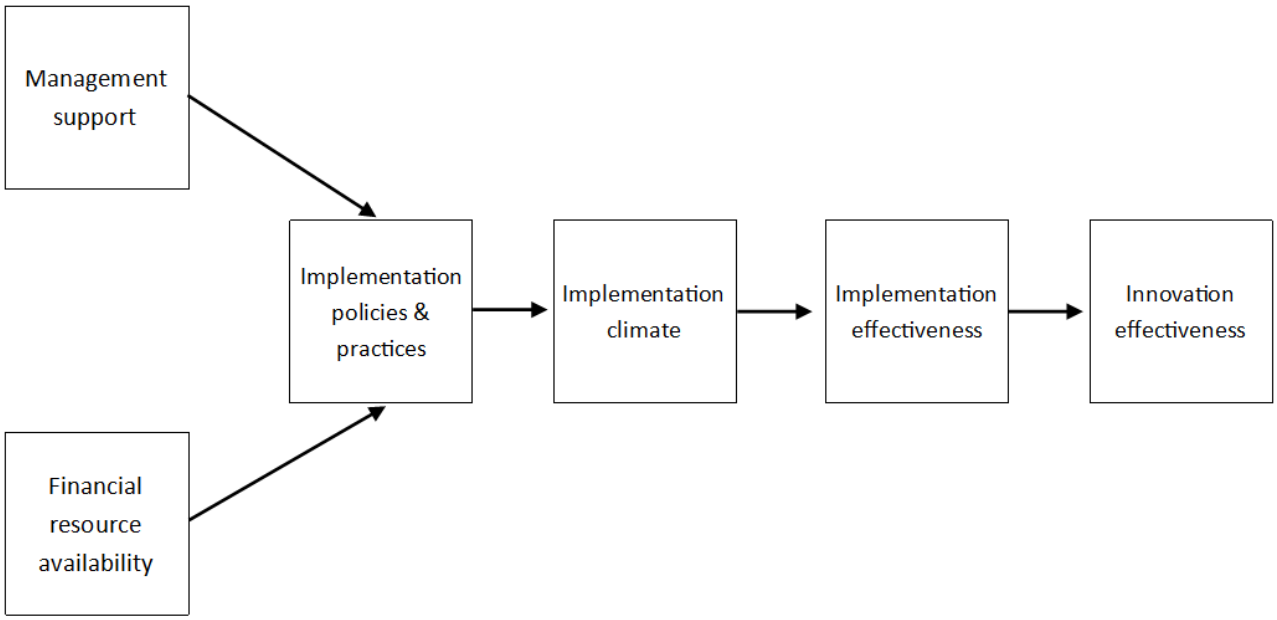

Figure 2.6: Predictors of implementation effectiveness and innovation effectiveness

Source: Adapted from Klein *et al*., 2001: 812.

Later on, Klein and Knight (2005: 245) also did an extensive review of the literature on innovation implementation and identified six key factors that shape the process and outcomes of innovation implementation. These factors are listed below in Table 2.9:

Table 2.9: Factors that shape the process and outcomes of innovation implementation

Factor	Description
Implementation policies and practices	The package of implementation policies and practices that an organisation establishes.
Climate for innovation implementation	The organisation's climate for innovation implementation in terms of employees' shared perceptions of the importance of innovation implementation within the team or organisation.
Support	Manager's support of innovation.
Financial resources	The availability of financial resources.
Learning orientation	A learning orientation in terms of a set of interrelated practices and beliefs that support and enable employee and organisational skill development, learning, and growth.
Time orientation	Managerial patience, a long-term time orientation.

Source: Klein & Knight, 2005: 245.

Other research related to the model of Klein *et al*. (2001) is a study by Sawang and Unsworth (2011), which had the intent to enhance the original theoretical model from Klein *et al*.'s (2001)

study. The study of Sawang and Unsworth (2011: 989) largely confirms the original model of Klein *et al*. (2001) across various types of innovation, and it extends the work of Klein *et al*. (2001) by highlighting the importance of human resources in implementation effectiveness as well as the impact of innovation effectiveness on future adoption attitudes. In essence, Sawang and Unsworth (2011: 989) found that the availability of skilled employees is positively related to implementation effectiveness and also that organisations that perceive a high level of benefits from implemented innovations are likely to have a positive attitude towards future innovation adoption.

It is also noteworthy that the study of Sawang and Unsworth (2011: 989) involved small and mid-size businesses, as opposed to the original study of Klein *et al*. (2001) which involved large manufacturing plants.

The enhanced model of Sawang and Unsworth is depicted in Figure 2.7 below.

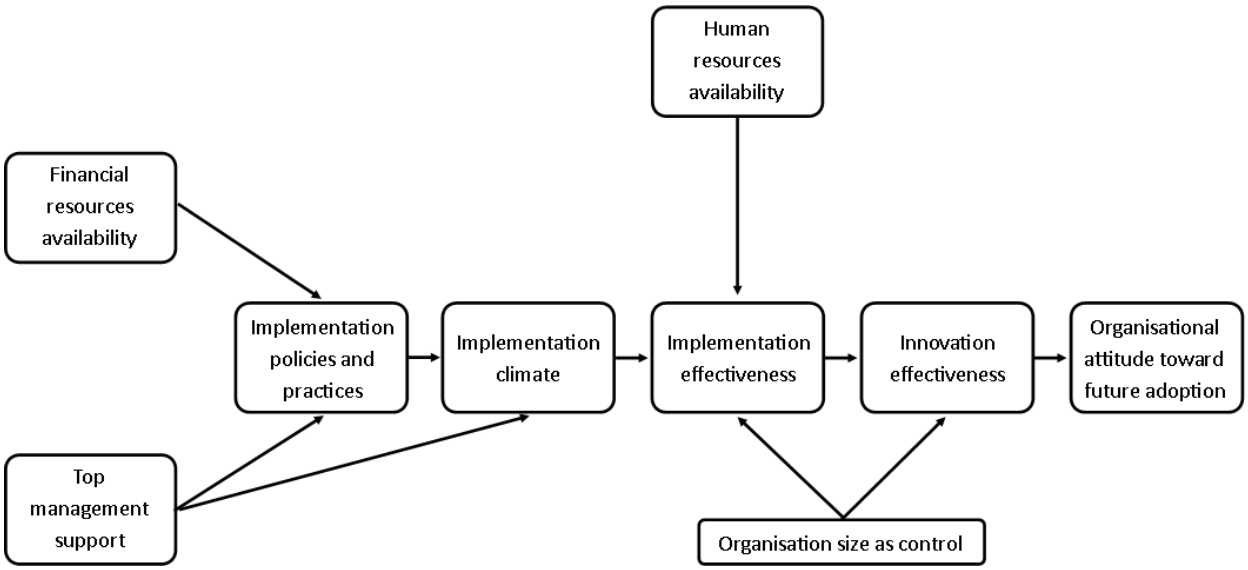

Figure 2.7: Sawang and Unsworth's proposed hypotheses for effective implementation

Source: Sawang and Unsworth, 2011: 995.

The study of Sawang and Unsworth (2011) led to the following findings and clarifications of the model of Klein *et al.* (2001), as described in Table 2.10 below.

Table 2.10: Clarifications of the model of Klein *et al.* (2001) by Sawang and Unsworth (2011)

Clarification theme	Description
Lack of significant association between the availability of financial resources and implementation policies and practices	There is a lack of significant association between the availability of financial resources and implementation policies and practices. Sawang and Unsworth (2011: 1003) suggested that the reason for this is that different types of innovations (i.e. incremental vs. radical) require different applications of financial resources. Implementing radical innovations – as was the case in the study of Klein *et al*. (2001) – incurs sizeable financial investments in implementation activities. In contrast, incremental innovations, such as upgrades to technology or modifications to existing products or services, are much less likely to need such high levels of resourcing. Sawang and Unsworth (2011: 1003) therefore proposed that radicalness may moderate the relationship between the availability of financial resources and implementation policies and practices.
Relationship between top management support and implementation climate	There is a robust relationship between top management support and implementation climate, which can provide additional understanding of the implementation climate (Sawang & Unsworth, 2011: 1003).
Skilful and capable employees	Skilful and capable employees increase the level of implementation effectiveness (Sawang & Unsworth, 2011: 1003). The study of Sawang and Unsworth (2001: 1005) showed that "a climate for implementation will be of no use if those who are involved are not sufficiently capable of using the innovation or conducting the implementation".
Attitude formation	When organisations perceive that the innovation is effective in a number of areas, they have a more positive attitude toward future innovation adoption. Sawang and Unsworth (2011: 1004) confirmed that this finding is consistent with knowledge in social and cognitive psychology regarding attitude formation, which has shown that attitudes are often based on previous experiences.

Source: Author's own.

In summary concerning the theory on innovation implementation, a number of key conclusions were revealed through the literature review, as described in Table 2.11 below.

Table 2.11: Conclusions on innovation implementation

Conclusion theme	Description
Difference between innovation adoption and innovation implementation	The difference between innovation adoption and innovation implementation has been established (Klein & Sorra, 1996: 1055).
Implementation effectiveness	Implementation effectiveness is a necessary but not sufficient condition for innovation effectiveness (Klein & Sorra, 1996: 1058).
Implementation climate	Implementation climate, with all its relating factors, has a key influence on innovation implementation. Implementation climate was included as a variable in the theories and hypothesis of all the mentioned studies (Klein & Sorra, 1996: 1060; Klein *et al*., 2001: 812; Taylor & McAdam, 2004: 34; Sawang & Unsworth, 2011: 989).
Managers' support for implementation	The primary antecedent of an organisation's climate for implementation is managers' support for implementation of the innovation (Klein & Sorra, 1996: 1074).
Decision-making models	It has also been established that there are different decision-making models (top-down or bottom-up), based on the type of innovation, e.g. administrative or technical (Dong *et al*., 2008; Damanpour & Gopalakrishnan, 1998).
Model of Klein and Sorra (1996)	A number of studies were based on the model of Klein and Sorra (1996), and made amendments to the model. Notable amendments include the dynamism of continual improvement and organisational change proposed by Taylor and McAdam (2004); Klein *et al*. (2001: 811) found that financial resource availability and high-quality implementation policies and practices also influence the climate for implementation; and Sawang and Unsworth (2011: 989) contributed the importance of human resources in implementation effectiveness and the impact of innovation effectiveness on future adoption attitudes.

Source: Author's own.

The researcher also observed that none of the studies that were mentioned regarding investigating innovation implementation made reference to the number or proportion of people that are required to use the innovation to deem it implemented or "routinised". This relates significantly to the observation of Linton (2002) who affirmed that implementation success is not well-defined yet.

Lastly and most importantly, the leading research studies on implementation were mostly done on large-scale information technology systems implementations or "administrative" innovations (Dong *et al*., 2008: 239). These types of innovation are typically implemented within organisations only following a formal decision on the part of senior managers to adopt the innovation (Klein & Sorra, 1996; Dong *et al*., 2008; Leiva, Culbertson & Pritchard, 2011; Taylor & McAdam, 2004; Klein *et al*., 2001; Sawang & Unsworth, 2011), and do not relate in depth to the concepts of selecting ideas, gaining support for ideas and acquiring resources to implement ideas. Furthermore, all of the

above references of research on implementation were related to the organisational-level view of implementation, considering organisational factors, and these studies did not take into consideration the significance of individual behaviours in terms of improving the odds of successfully realising potentially useful ideas in an organisation.

Consequently, the next section investigates how the role of the individual has been researched in terms of idea implementation.

2.5 FACTORS THAT INFLUENCE IDEA IMPLEMENTATION IN THE CONTEXT OF IIB

The case was made in the previous section that individual behaviour did not receive much attention in terms of research on innovation implementation (Sproull & Hofmeister, 1986: 43; Klein & Sorra, 1996: 1056; Klein *et al*., 2001: 821; Linton, 2002: 67; Piening, 2011: 128). In this section the researcher drills down further into the concept of the individual taking action to implement ideas conceptualised as the construct of IIB.

It is firstly argued in this section that research on the individual level in the context of organisational innovation was mostly conducted on the idea generation (creativity) phase. This is followed by a brief discussion of the theoretical lenses that were used to explain the behaviour of individuals taking action to implement ideas in the context of IIB. Then follows a review of two prominent models which have been suggested in the literature to investigate IIB. The discussion of theory and the applicable models is succeeded with a review of some of the main factors which influence IIB. After the review of the factors which influence IIB, three prominent studies which respectively investigated particular factors relating to IIB are summarised. Lastly, the reasons for the choice of the main constructs for this study, S-E and POS, are disclosed.

2.5.1 Overview

It is apparent in the literature that research on individual-level factors was mostly aimed at investigating creative thinking and idea generation (Amabile, 1985, 1997; McAdam & McClellan, 2002; Mumford, 2000). This research has produced an abundance of evidence that links individual factors to creativity or idea generation, for example openness to experience, persistence, curiosity, energy, a propensity for risk taking, a desire for autonomy and social independence, high tolerance of ambiguity in problem solving, and intellectual honesty (Hennessey & Amabile, 2010; Feist, 1998; Scratchley & Hakstian, 2000, all cited in Magadley & Birdi, 2012: 3; George & Shalley, 2008, Zhou & Oldham, 2004, both cited in Baer, 2012: 1102; McAdam & McClelland, 2002: 88).

However, a thought-provoking criticism that was found on individual creativity research was the opinion of Nayak (2008: 423), who argued the case that a major limitation of the individual creativity research is its reliance on studies of the psychology of the creative person.

Nayak (2008: 423) pointed out that organisational researchers have uncritically drawn on creativity studies that are based on “artists, poets and children”, to see whether organisations have an impact on creativity. There is ample evidence of models of creative thinking which have in fact been used in predicting creativity in engineers (Amabile & Gryskiewicz, 1987), children (Amabile, Hennessey & Grossman, 1986), artists (Amabile, 1979), and writers (Amabile, 1985). Nayak (2008: 423) reasoned that by posing the question in this manner, researchers have self-evidently constructed the organisational setting as inhibiting creativity, meaning, “…they assume that outside the organisational environment creativity would have flourished”. Nayak referred to this phenomenon as “psychology bias”, and further reasoned that the major limitation of psychology bias in studies on creativity in organisations is that they predefine creative people within organisational settings rather than as managers who have to be inventive and resourceful.

Nayak (2008: 423) rightfully called attention to the fact that for managers, the organisational context can vary from stability and routine to demands of transformation and change and both these scenarios impact on individual ingenuity, but current studies do not provide a way of comprehending these managerial realities. Instead, the organisational realities which managers face are seen as the problem and inhibitor of “creativity”. Nayak (2008: 423) concluded that: “suggestions from the existing literature that creativity in organisations requires managers to be more playful, childlike or mimic the settings of idealised creative people such as poets, artists and scientists does not reflect managerial creativity”.

The view of Nayak (2008: 423) is in line with the approach taken for this study, namely that idea generation in the context of organisational innovation is typically bound by practical restraints, and it is the process through which employees develop novel and useful solutions to challenges and problems encountered in pursuit of work objectives (Hirst *et al*., 2009: 281).

Nevertheless, it is not entirely the case that the role of the individual has gone unnoticed in implementation research. It has been argued by researchers of innovation implementation, such as Taylor and McAdam (2004: 36) and Dong *et al*. (2008: 249), that insight into the role of the individual is an important starting point for investigating innovation implementation. Klein and Sorra (1996: 1074) also commented that the role of non-managers in fostering implementation becomes an increasingly important topic for research. However, not much research has been conducted concerning how individuals take action on ideas in an organisational context (Baer, 2012: 1103; Axtell *et al*., 2004: 265; Sawang & Unsworth, 2011: 990; Linton, 2002: 65).

Whereas the research on creativity in the context of organisational innovation isolated the individual and the stage (idea generation), and identified a number of traits as being vital for idea generation, the same did not occur for idea implementation. The researcher argues that this is to be expected, since while a person can be creative and generate new ideas alone, the

implementation of ideas typically depends upon the approval, support and resources of others (Axtell *et al*., 2000: 269; Baer, 2012: 1103; Daniels *et al*., 2011: 584), thus making it challenging to isolate the individual and the process of implementation for research purposes.

Therefore, to find out what makes individuals act on their ideas, the approach taken for this study was to view innovation implementation in the context of IIB, and therefore idea generation and idea implementation were not treated as distinct processes. Instead, they were treated as cyclical, recursive activities where ideas lead to action and action leads to ideas, all with the aim of bringing ideas to fruition and realising the perceived benefits of ideas within the context of the organisational setting with its everyday realities and challenges (Nayak, 2008: 423; Hirst *et al*., 2009: 281).

2.5.2 Theory on idea implementation by individuals

The theories in the literature relating to individuals taking action to implement ideas are investigated in this section.

Before a person acts, a person thinks, and comprehension of the mental activity around idea implementation can lead to predictions about people's implementation behaviours and generate suggestions for influencing those behaviours (Sproull & Hofmeister, 1986: 44). Sproull and Hofmeister (1986: 44) viewed a cognitive focus as important for understanding idea implementation, based on the argument that unlike habitual or routine behaviour, innovation implementation, which is about doing something new, entails substantial mental activity and effort.

Sproull and Hofmeister (1986: 45) identified three cognitive processes which contribute to people's mental representations of an innovation that have behavioural consequences for the implementation process. A person's response to a new idea involves the cognitive processes of interpretation, attribution and inference.

Sproull and Hofmeister (1986: 45) described these three processes as follows:

- *"Interpretation* entails the development of a mental picture of the new idea, by visualizing the kinds of activities it would entail and the behavioural and attitudinal changes that would be necessary to accomplish those activities.
- *Attributio*n entails identifying probable causes of difficulties in the innovation.
- *Inference* entails estimating how useful the innovation will be and how easy it will be to change behaviour to conform to it".

Sproull and Hofmeister (1986: 55) also found that people differ in how they think about and evaluate the implementation of a new idea.

There are three prominent theories in the literature which endeavoured to explain human actions related to innovative behaviour in the organisation. These are the Theory of Organizational Creativity of Woodman *et al*. (1993); the Theory of Individual Creative Action in Multiple Social Domains of Ford (1996); and the Action Regulation Theory of Frese (2007).

The Theory of Organizational Creativity of Woodman *et al*. (1993: 294) is based on "interactional psychology". Woodman *et al*. (1993: 294) defined organisational creativity as: "The creation of a valuable, useful new product, service, idea, procedure, or process by individuals working together in a complex social system".

Woodman *et al.* (1993: 294) reasoned that interactional psychology provides a strong theoretical base from which to model complex behavioural phenomena and the interactionist perspective has great promise for explaining human behaviour in complex social settings. The model of Woodman *et al*. (1993) is solidly based on the interactionist perspective. According to Woodman *et al*. (1993: 294), from an interactionist perspective, the behaviour of a person at any point in time is a complex interaction of the situation and the person.

This interactionist model of Woodman *et al*. (1993: 293) provides an integrating framework that combines elements of the personality-, cognitive-, and social psychology explanations of "organisational creativity". Woodman *et al*. (1993: 294) further theorised that the components of persons, processes, situations, and products are essential for a comprehensive understanding of innovation in complex social systems. Figure 2.8 below provides a conceptualisation of the crucial links among persons, processes, situations, and products as theorised by Woodman *et al.* (1993: 309).

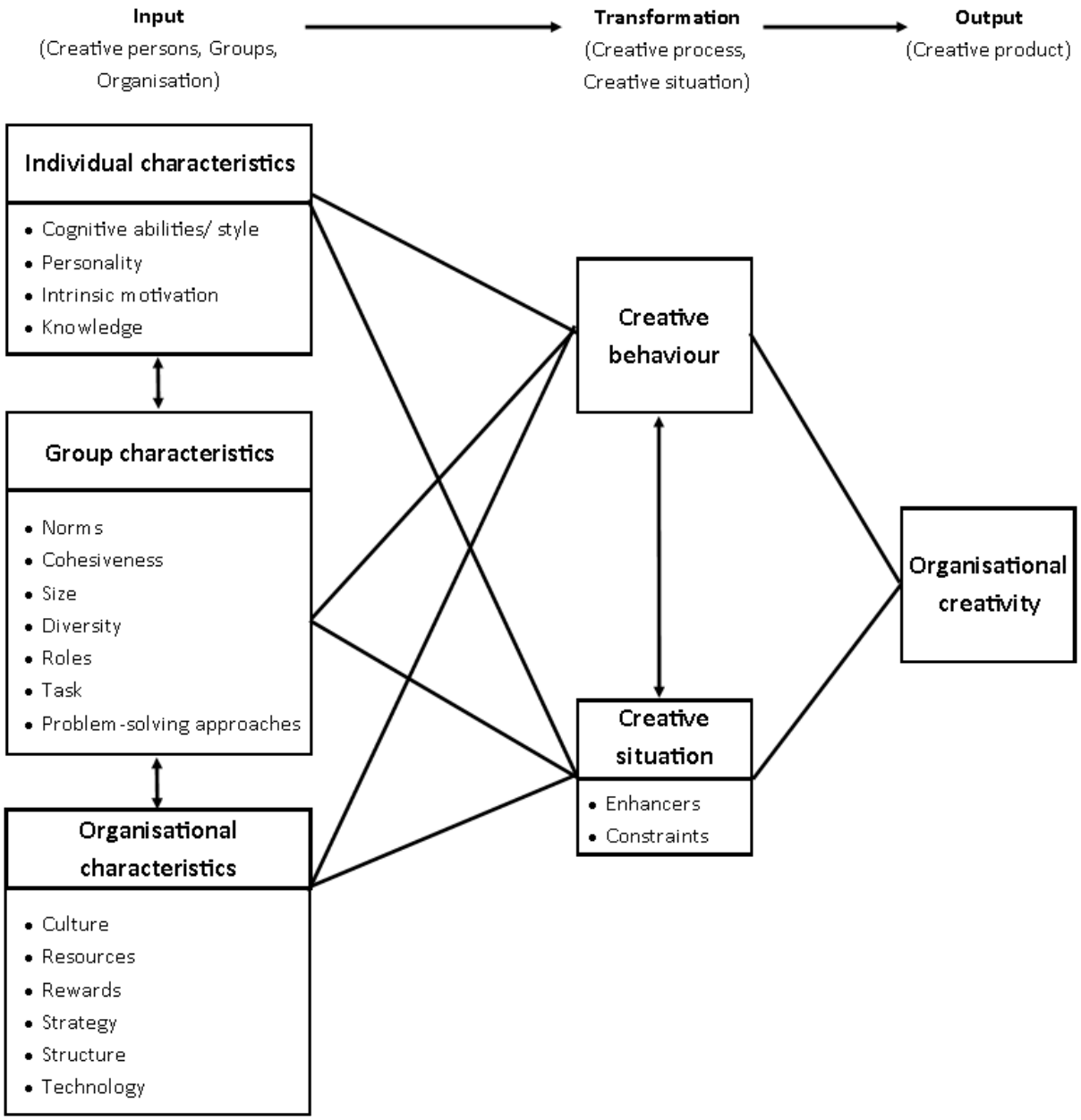

Figure 2.8: Woodman *et al.*'s conceptual links for organisational creativity

Source: Woodman *et al.*, 1993: 309.

Woodman *et al*. (1993: 310) pointed out that the characteristics shown in the model are illustrative and not intended to suggest an exhaustive list.

Ford (1996) admittedly built on the model of Woodman *et al.* (1993) and constructed a Theory of Individual Creative Action in Multiple Social Domains which linked psychological and sociological concepts of "creative action". As opposed to the theory of Woodman *et al*. (1993) which conceptualised an integrated framework, the theory of Ford is based on the individual psychological processes and the interaction with the sociological environment. According to the theory of Ford (1996: 1117), actions result from the joint influence of sensemaking, motivation, and

knowledge and ability, and the interactions between these influences are complex and nonlinear. A schematic presentation of this model is shown in Figure 2.9 below.

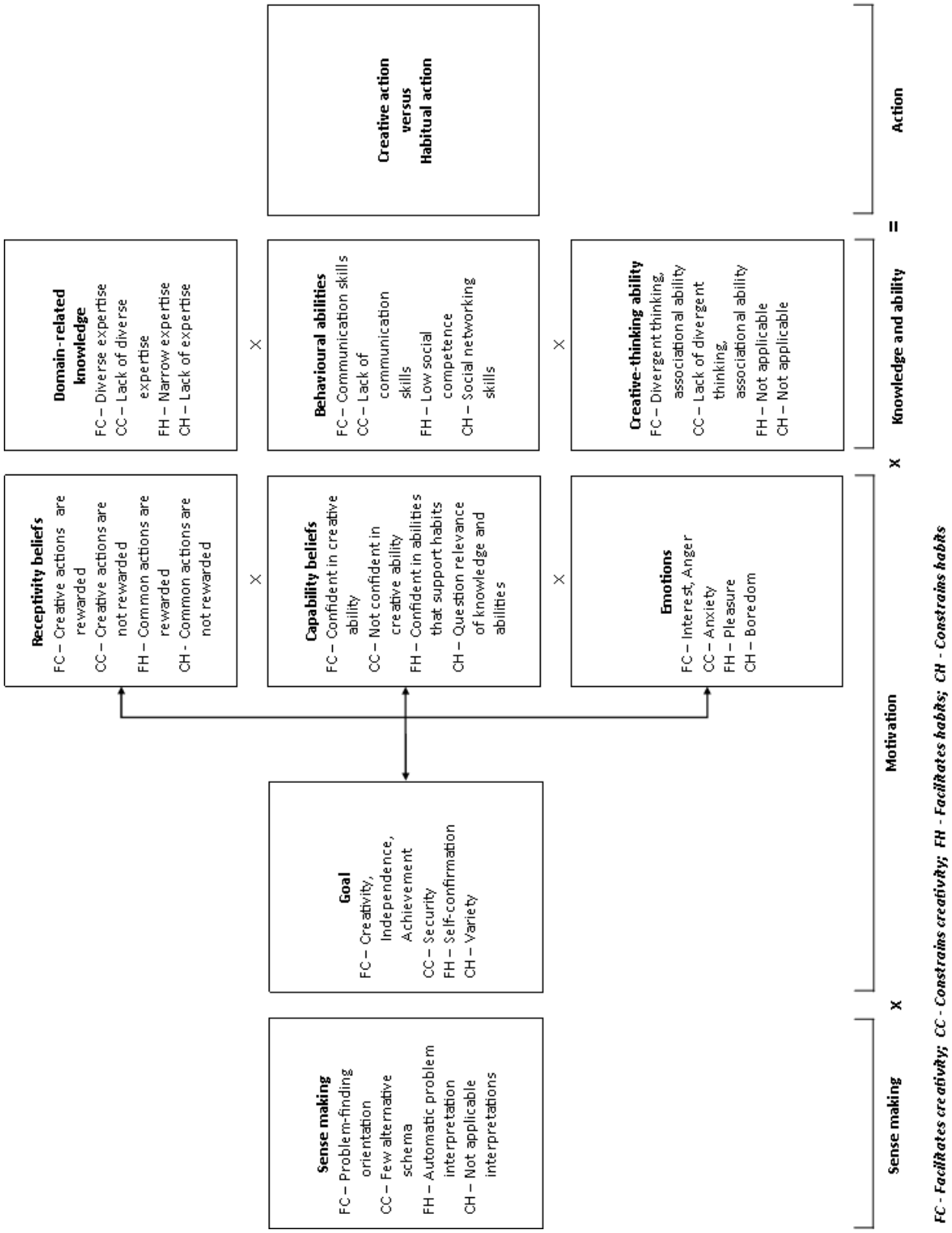

Figure 2.9: Ford's theory of creative individual action

Source: Ford, 1996: 1118.

Ford (1996: 1112) offered a comprehensive discussion on all the variables, and his theory is also based on the premise that creative and habitual actions represent competing behavioural options that may be simultaneously influenced by multiple domains of social action. Ford (1996: 1112) did not provide explicit definitions for “creative actions” or “habitual actions”, but he referred to “creative actions” as “…the primary events that distinguish innovations from more pedestrian pursuits”, and to “habitual actions” as “routine actions”.

Unlike prior conceptualisations of organisational creative actions, Ford’s (1996: 1125) theory implies that creative actions must hold a relative advantage to routine actions in terms of expected personal consequences before “creative pursuits” will be intentionally undertaken. In essence, Ford (1996: 1116) maintained that even in circumstances that favour creative action, people will likely choose familiar behavioural options that are relatively more attractive based on their past success, and on relative ease and certainty. Therefore, creative actions are not likely to emerge unless they are expected to present personal consequences that are relatively more desirable than familiar behaviours.

Frese (2007: 152) presented a psychological Theory of Action Regulation and applied it to entrepreneurship. Frese (2007: 152) stated that he believes that such a theory of action is important for entrepreneurship because the nature of entrepreneurship is to proactively produce effective solutions to problems and opportunities – which resonates well with the meaning of innovation (Zhao, 2005: 25).

Frese’s theory is based on the Action Regulation Theory. He described it as: “Action Regulation theory is a meta-theory that attempts to understand how people regulate their actions to achieve goals actively and how this is done both in routine situations as well as in novel situations” (Frese, 2007: 152).

Frese maintained that action is goal-oriented behaviour and he listed the building blocks of his theory to understand how humans regulate their actions as: sequence, structure, and focus. He explained: “Sequence refers to how actions unfold, structure involves levels of regulation, and the focus of an action can be the task, the social context in which the task is done, and the self” (Frese, 2007: 153).

In conclusion, it is apparent from the information revealed in this section that cognitive processes of the individual play an important role in comprehending IIB (Sproull & Hofmeister, 1986: 44). Additionally, based on the theories found in the literature, the argument is also made that IIB is different from routine behaviour. Because IIB involves behaviour outside the norm, the individual who wants to be innovative (i.e. implement useful ideas) will think about and evaluate potential consequences of these planned actions, and this evaluation will be influenced by personality-,

cognitive-, and social psychology elements, which are inherent to the organisational context and the social interactions in which the actions will take place.

The theories related to IIB were evaluated, and to gain further insight into the construct, the researcher reviewed two models which were purposefully developed to examine IIB – these are discussed in the next section.

2.5.3 Models for studying individual innovative behaviour in organisations

Two models were found in the literature for investigating IIB. These are the model of West and Farr (1989), which was the first evidence found of a theorised model for investigating individual innovation at work, and the model of Hammond *et al*. (2011) which was utilised to conduct a meta-analysis of predictors of individual-level innovation at work.

West and Farr (1989: 15) made a plea that more individual and social psychology orientations must be adopted to study innovation and they developed a model of individual innovation at work based on psychological perspectives, which is shown in Figure 2.10 below.

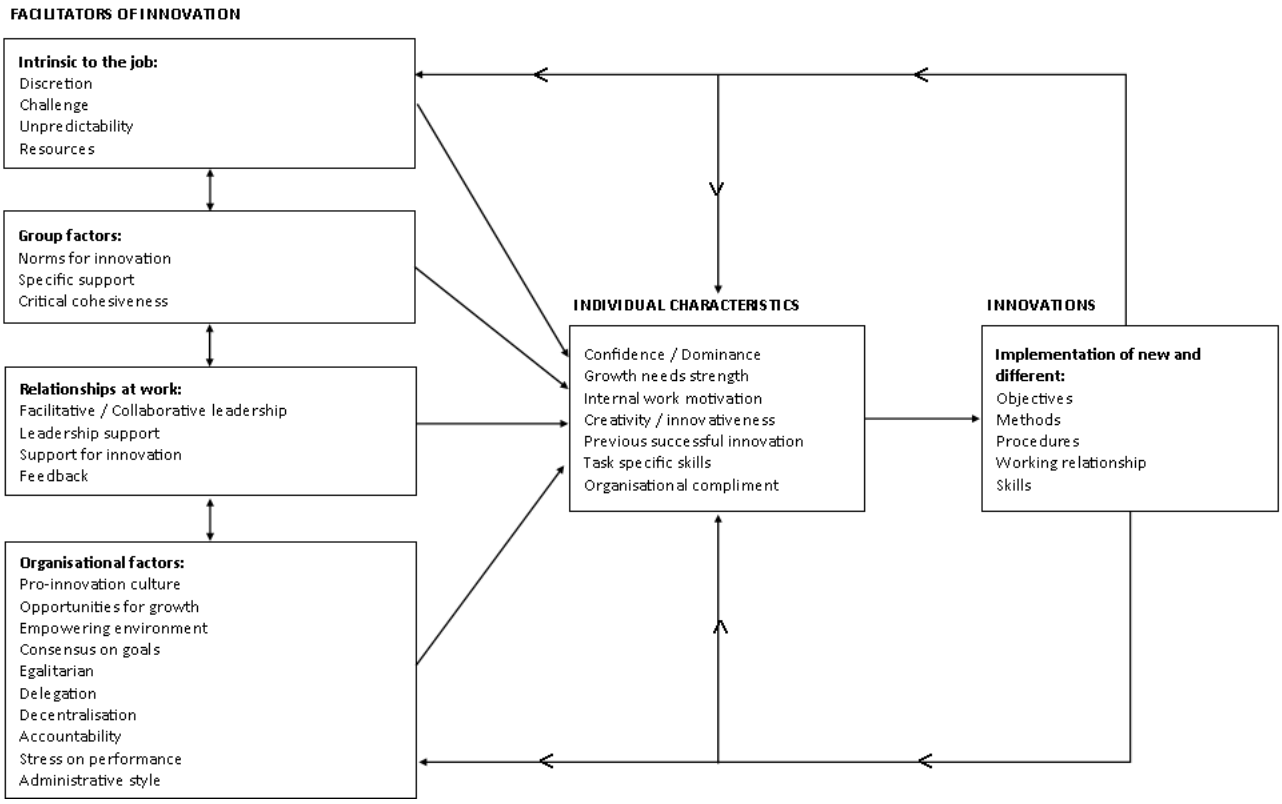

Figure 2.10: West and Farr's model of individual innovation at work

Source: West & Farr, 1989: 24.

West and Farr (1989: 16) described innovation as: "…intentional attempts to derive anticipated benefits from some change". In their model, facilitators of innovation were divided into the "major

psychological and organizational factors which appear to facilitate individual innovation in organizations" and the model was offered as a starting point for psychological research in the area (West & Farr, 1989: 24).

Innovation was specified as the dependent variable and the facilitators of innovation were grouped into the following categories: Factors intrinsic to the job; Group factors; Relationships at work; Organisational factors; and Individual characteristics. West and Farr (1989: 27) stated that the model's clarity makes for easily testable propositions and "it integrates both individual and social perspectives in an interactionist orientation".

West and Farr (1989: 27) listed the "multiplicity" of factors as a weakness of the model, since it makes prediction more difficult. They also disclosed that their model does not address process issues in depth and that they have yet to specify in detail the relationships between these factors or the precise nature of some of the recursive loops that undoubtedly exist. Correspondingly, they did not specify which factors will have linear or curvilinear relationships with innovation performance (West & Farr, 1989: 27). After advising that their model can guide future research to assess the extent to which the identified factors contribute independently to innovation, West and Farr (1989: 28) concluded with the view that the study of individual innovation presents an optimistic picture of people's involvement in their social and organisational contexts, and promises to advance knowledge on how individuals can be effective in transforming and shaping their organisations.

Hammond *et al.* (2011: 90) commented that no studies have quantitatively reviewed individual-level employee innovation, despite calls for meta-analyses in this area, and consequently did a meta-analysis of predictors of individual-level innovation at work. They then suggested an interactionist approach where factors do not predict innovation in isolation, but rather interact with one another to either facilitate or inhibit innovation (Hammond *et al*., 2011: 90). Specifically, the interactionist model signifies that innovative behaviour is a function of antecedents (biographical variables and past reinforcements of creativity), personality, cognitive factors (abilities, styles, knowledge, and preferences), intrinsic motivation, social influences (support and rewards), and contextual influences (physical environment and constraints). Consequently, Hammond *et al.* (2011: 91) identified four areas of particular importance for innovative performance, namely individual differences, motivation, job characteristics, and contextual influences. The model of Hammond *et al.* (2011: 90) is shown in Figure 2.11 below.

Hammond *et al*. (2011: 91) followed the approach of separating innovation into the two phases of ideation and implementation, and their study investigated factors which influence the ideation stage, the implementation stage and the entire innovation process.

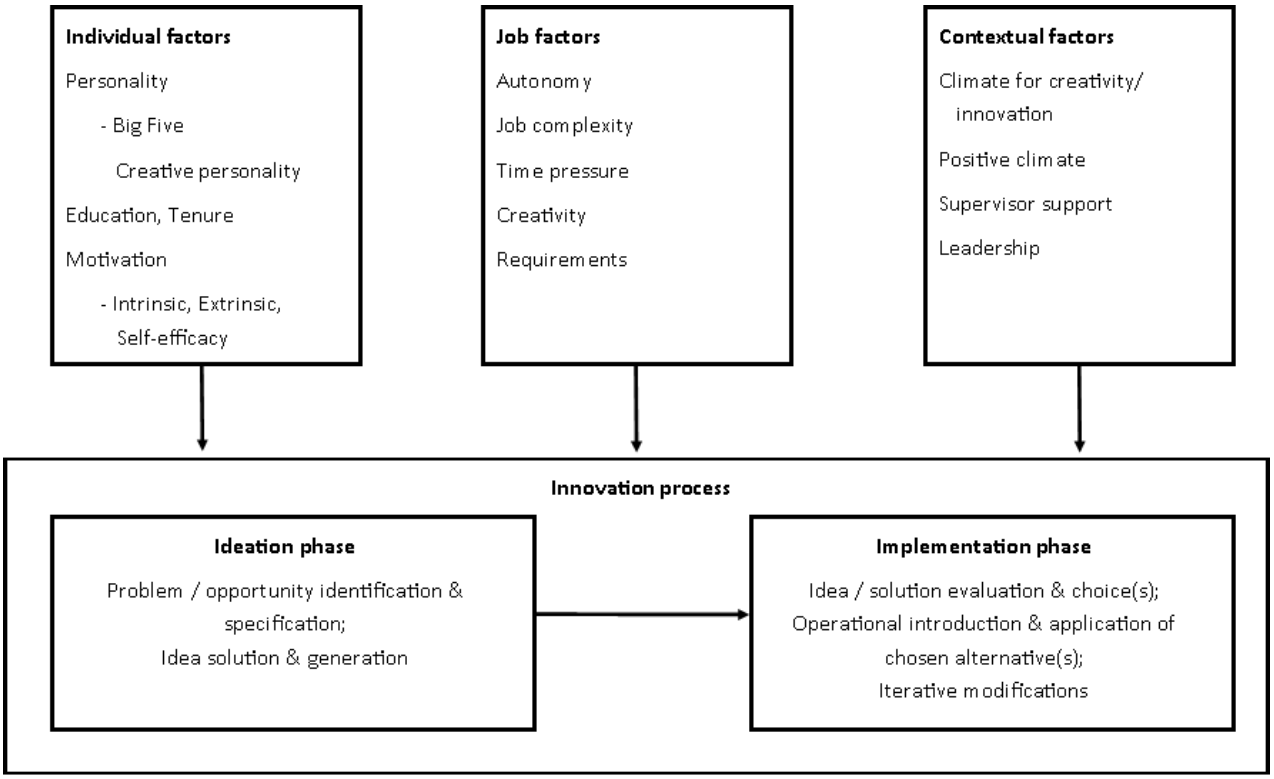

Figure 2.11: Hammond *et al.*'s model of the antecedents of individual innovation

Source: Hammond *et al*., 2011: 91.

It is evident that the two models for individual innovation which have been discussed are aligned to the theories of IIB (Woodman *et al.*, 1993; Ford, 1996) investigated in the previous section. These models include individual, group, job, and contextual factors, as well as the social interaction element, but go beyond the theories that have been discussed by listing specific variables that are applicable to the identified factors.

The theories for explaining IIB and the models for studying IIB have been reviewed. In the following section, the variables that promote IIB in the organisational context as identified in the literature are reviewed.

2.5.4 Individual-level traits that influence idea implementation

The key traits (at the individual level) which emerged from the literature as having an influence on the implementation of ideas in the context of IIB are reviewed in this section.

A few prior studies examined the impact of individual traits with regards to committed innovation use and found factors such as education, background and tenure (Dong *et al*., 2008: 238) as having an influence on innovation implementation.

Axtell *et al.* (2000: 281) researched shop floor workers in a manufacturing organisation and found that individuals' participation in decision making emerged as the most powerful predictor of implementation. The study of Axtell *et al*. (2000: 281) also found that the factors most strongly associated with the implementation of suggestions are group and organisational rather than the individual or job factors, but they then also mentioned a study by Bunce and West (1995) who, on the other hand, discovered that individual factors are more highly related to the implementation of individual ideas as opposed to the group ones.

Axtell *et al*. (2000: 281) argued that the difference in these findings is due to the fact that the study of Bunce and West (1995) was done in a different context than the study of Axtell *et al*. (2000). In the study of Bunce and West (1995), the respondents involved were health care professionals vs. the study of Axtell *et al*. (2000) which investigated shop floor workers. Axtell *et al*. (2000: 281) argued that professionals have more autonomy and freedom to break away from the organisational norms and do things their own way compared to shop floor employees. Based on this argument, Axtell *et al*. (2000: 281) proposed that it may be that individual factors have more of an impact on whether professional employees' ideas are successfully implemented or not, whereas shop floor employees may be more reliant on the group or organisational context in order to get their ideas implemented.

Hammond *et al*. (2011: 101) found autonomy to be the factor with the strongest relationship with implementation at the individual level; and argued that autonomy is an important factor as it provides an individual with freedom to decide how, when, and with whom to work. Cadwallader *et al*. (2010: 231) investigated frontline employee motivation to participate in service innovation implementation and also found that employee task autonomy is positively related to motivation to participate in service innovation implementation.

Based on the motivation factors which demonstrated a consistently positive relationship with individual innovative behaviour, Hammond *et al*. (2011: 97) also found that motivation (intrinsic and extrinsic) demonstrates stronger relationships with individual innovation than personality factors do. As additional support for this argument, Hammond *et al*. (2011: 99) referred to a number of studies which examined the influence of personality on individual innovative behaviour and suggested that personality may not have a direct relationship with innovative performance, but rather interact with environmental factors (Zhou, 2003; Zhou & Oldham, 2001, both cited in Hammond *et al*., 2011: 99).

In addition, key factors that emerged as having a significant influence on individuals who implement ideas are: personal initiative (Daniels *et al*., 2011; Fuller & Marler, 2009: 330; Frese & Fay, 2001: 133), motivation (Mitchell, 1982; Cadwallader *et al*., 2010; Baer, 2012; Ryan & Deci, 2000), proactivity (Bateman & Crant, 1993; Grant & Ashford, 2008; Unsworth & Parker, 2003;

Fuller & Marler, 2009), goal-orientation (Yan, 2011; Oldham & Baer, 2012; Alexander & Van Knippenberg, 2014; Montani, Odoardi & Battistelli, 2014; Hirst *et al*., 2009) and self-efficacy (Axtell *et al*., 2000; Tierney & Farmer, 2002; Wang & Lin, 2012; Stajkovic & Luthans, 1998; Bandura, 1982; Tabak & Barr, 1996).

Other attributes which have also been theorised as having an influence on IIB, but which have not been verified empirically, include: an individual's problem-solving style (Scott & Bruce, 1994; Daniels *et al*., 2011) and mastery orientation (Janssen & Van Yperen, 2004; Hirst *et al*., 2009).

Some of the notable studies that investigated the themes of personal initiative, motivation, proactivity and goal-orientation – specifically in relation to idea implementation – are reviewed below.

2.5.4.1 Personal initiative

Daniels *et al*. (2011: 582) worked from the premise that problem solving has a strong influence on individual innovation and then positioned the demand-control-support model (DCSM) as a suitable model for explaining how job control and support can be enacted to solve problems, and hence generate and implement ideas.

Concerning support, in line with the viewpoint of Baer (2012: 1102), Daniels *et al*. (2011: 584) argued that implementing ideas has a social element, in which individuals need to gather feedback on their ideas, involve others in selecting the best ideas, transform their ideas, and gain support for their ideas. Therefore, Daniels *et al*. (2011) said they expect that individuals high in personal initiative will be motivated to acquire the political and social knowledge (Seibert *et al*., 2001; Frese & Fay, 2001, both cited in Daniels *et al*., 2011: 584) to help them overcome the social barriers inherent in implementing ideas in organisational settings.

Moreover, the study of Daniels *et al.* (2011: 595) ultimately indicated that personal initiative moderates the link between idea generation and implementation ('to generate and implement novel solutions') through job control ('changing work activities to solve problems'); and supports solving problems ('discussing problems to solve problems').

Bledow *et al.* (2009b: 367) are also advocates for the relationship between personal initiative and IIB, referring to the occurrence that personal initiative implies that employees develop future-oriented ideas for changing some aspect of their work environment. They also claimed that the climate for initiative has been found to facilitate implementation of ideas, because an active work culture ensures that employees self-start to deal with unforeseen problems during the implementation of ideas (Bledow *et al*., 2009a: 330).

2.5.4.2 Motivation

Motivation is defined as the degree to which a person wants and chooses to engage in specified behaviours (Mitchell, 1982). Cadwallader *et al*. (2010: 220) determined that no research has yet explored the antecedents and consequences of motivation relevant to employee participation in innovation. To achieve this objective, Cadwallader *et al*. (2010: 220) developed and tested a theoretical model of employee motivation in the context of a real world business setting in which the innovation was a customer self-service technology being integrated into an existing organisational structure.

The model of Cadwallader *et al*. (2010: 220) is grounded in self-determination theory (SDT) and their study specifically focused on "frontline employees". Cadwallader *et al.* (2010: 221) view motivation as: "To be motivated means to be moved to do something. Thus, a person who feels no impetus or inspiration to act is characterized as unmotivated, whereas 'someone who is energized or activated toward an end' is considered motivated" (Ryan & Deci, 2000: 54, cited in Cadwallader *et al*., 2010: 221).

Similar to Axtell *et al*. (2000: 281) and Hammond *et al*. (2011: 101), Cadwallader *et al.* (2010: 225) also found that employees with more autonomy regarding the task should feel more positive about innovation. Likewise, as with the findings of Baer (2012: 1105), Cadwallader *et al.* (2010: 225) also found that employees who feel and think more positively about the innovation should be more motivated to participate in its implementation.

Aligned with the findings of Cadwallader *et al*. (2010: 231), is the study of Baer (2012: 1102), which also established that motivation is a moderator of the link between idea generation and idea implementation.

2.5.4.3 Proactivity

Similar to innovation, a unified stream of research regarding proactivity does not exist, as most proactive behaviours have been studied in isolation of one another (Grant & Ashford, 2008: 6).

However, there are a number of studies which link proactive behaviour to innovation (Grant & Ashford, 2008; Unsworth & Parker, 2003; Fuller & Marler, 2009). The link between innovation (in terms of behaviours designed to generate and implement new ideas) and proactive behaviour is highly probable as proactivity is about being self-starting and action-oriented in order to enhance personal or organisational effectiveness through change. An example of this would be by making improvements to work procedures or using one's initiative to solve a problem (Unsworth & Parker, 2003: 3; Yuan & Woodman, 2010: 323).

Fuller and Marler (2009: 330) reasoned that the proactive personality construct has its roots in interactionism, which holds that "situations are as much a function of the person as the person's behaviour is a function of the situation"; and social cognitive theory, which holds that the "person, environment, and behaviour continuously influence each other". Proactive people are characterised as seeking out opportunities, showing initiative, and persevering to bring about meaningful change (Bateman & Crant, 1993: 105).

Unsworth and Parker (2003: 5) are of the opinion that proactivity is broader than innovation, as it can result in creativity and innovation, but it can also result in other outcomes such as effective problem solving and coping with demands. Unsworth and Parker (2003: 5) further maintained that proactivity is likely to be an important driver of innovation and more specifically that persistence and the focus on pushing change attributed to proactivity, is particularly relevant to idea implementation, which involves behaviours such as seeking sponsorship for ideas and building support – which were identified as key elements of IIB in Section 2.3.3.

Parker and Collins (2010: 652) categorised individual innovation (defined as "…behaviours involved in the creation and implementation of ideas including identifying an opportunity, generating new ideas or approaches, and implementing the new ideas") under proactive work behaviour, and found significant correlation between the two constructs.

2.5.4.4 Goal orientation

Innovation is a goal-directed process (Kanter, 1988; Van de Ven, 1986; West, 2002), and goal orientation has been theoretically identified as a critical driver of employee innovation (Yan, 2011; Oldham & Baer, 2012; Alexander & Van Knippenberg, 2014, Montani *et al*., 2014; Hirst *et al*., 2009). Alexander and Van Knippenberg (2014: 425) put forward that because of the uncertainty and risk of failure inherent in innovation, goal orientation theory with its emphasis on orientations on learning, successful performance, and the avoidance of failure, is particularly useful for understanding the motivational mechanisms that underpin the innovation process. Two distinct goal orientations have been commonly identified: a performance goal orientation, focused on the demonstration of competence to others; and a learning goal orientation, focused on the development of competence and task mastery (Hirst *et al*., 2009: 282). Montani *et al*. (2014: 662) pointed out that relatively little attention has been devoted to empirically testing the effects of goal generation on individual innovative behaviour, and their study demonstrates empirically that employees' learning goal orientation is highly conducive to innovative behaviour at work. More specifically, Montani *et al.* (2014: 662) showed that employees who invest their efforts in setting challenging change-oriented goals as well as in developing corresponding goal-directed strategies, have increased the odds of enacting effective innovative courses of action.

2.5.4.5 Self-efficacy

The construct of self-efficacy and it's relation to innovative behaviour is one of the key constructs of this study and is discussed in substantial detail in the next chapter.

In summary, in this section, the prominent factors at the individual level that influence IIB have been reviewed. Factors such as participation in decision making (Axtell *et al*., 2000: 281) and autonomy (Axtell *et al*., 2000: 281; Hammond *et al*., 2011: 101; Cadwallader *et al.,* 2010: 231) emerged as significant predictors of innovation implementation.

In addition, other identified factors associated with innovative behaviour are: personal initiative (Daniels *et al*., 2011; Fuller & Marler, 2009: 330; Frese & Fay, 2001: 133), motivation (Mitchel, 1982; Cadwallader *et al*., 2010; Baer, 2012; Ryan & Deci, 2000), proactivity (Bateman & Crant, 1993; Grant & Ashford, 2008; Unsworth & Parker, 2003; Fuller & Marler, 2009), goal-orientation (Yan, 2011; Oldham & Baer, 2012; Alexander & Van Knippenberg, 2014; Montani *et al*., 2014; Hirst *et al*., 2009) and self-efficacy (Axtell *et al*., 2000; Tierney & Farmer, 2002; Wang & Lin, 2012; Stajkovic & Luthans, 1998; Bandura, 1982; Tabak & Barr, 1996).

The theories and models related to IIB, as well as the factors influencing IIB have been reviewed. A more pragmatic approach is taken in the next section to bring all these concepts together, through a review of three studies which specifically had the objective of investigating IIB.

2.5.5 Case studies of research on individual innovative behaviour

The literature revealed three studies where IIB was specifically investigated. These are the studies of Scott and Bruce (1994), Yuan and Woodman (2010) and Baer (2012). Each of these studies and the relevant findings applicable to this study are summarised below.

2.5.5.1 The study of Scott and Bruce

Scott and Bruce (1994: 580) took the study of IIB a step further by integrating a number of streams of research on the antecedents of innovation to develop and test a model of IIB that draws on the social interactionist approach. More specifically, Scott and Bruce (1994: 580) hypothesised that leadership, individual problem-solving style, and work group relations affect innovative behaviour directly, and indirectly through their influence on perceptions of the climate for innovation. Scott and Bruce (1994: 580) tested the parameters of their proposed model simultaneously and also explored the moderating effect of task characteristics.

The model of Scott and Bruce is shown in Figure 2.12 below. The dependent variable in the model is "Innovative behaviour". The authors viewed IIB as the outcome of four interacting systems – individual, leader, work group, and climate for innovation (Scott & Bruce, 1994: 583).

The model of Scott and Bruce (1994) is noticeably based on the theory of West and Farr (1989), including elements of individual characteristics – central to the theory of West and Farr (1989: 24); leadership – which featured under "Relationships at work" in the model of West and Farr (1989: 24); work group – "Group factors" in the model of West and Farr (1989: 24); and climate – featuring under "Organisational factors" in the model of West and Farr (1989: 24).

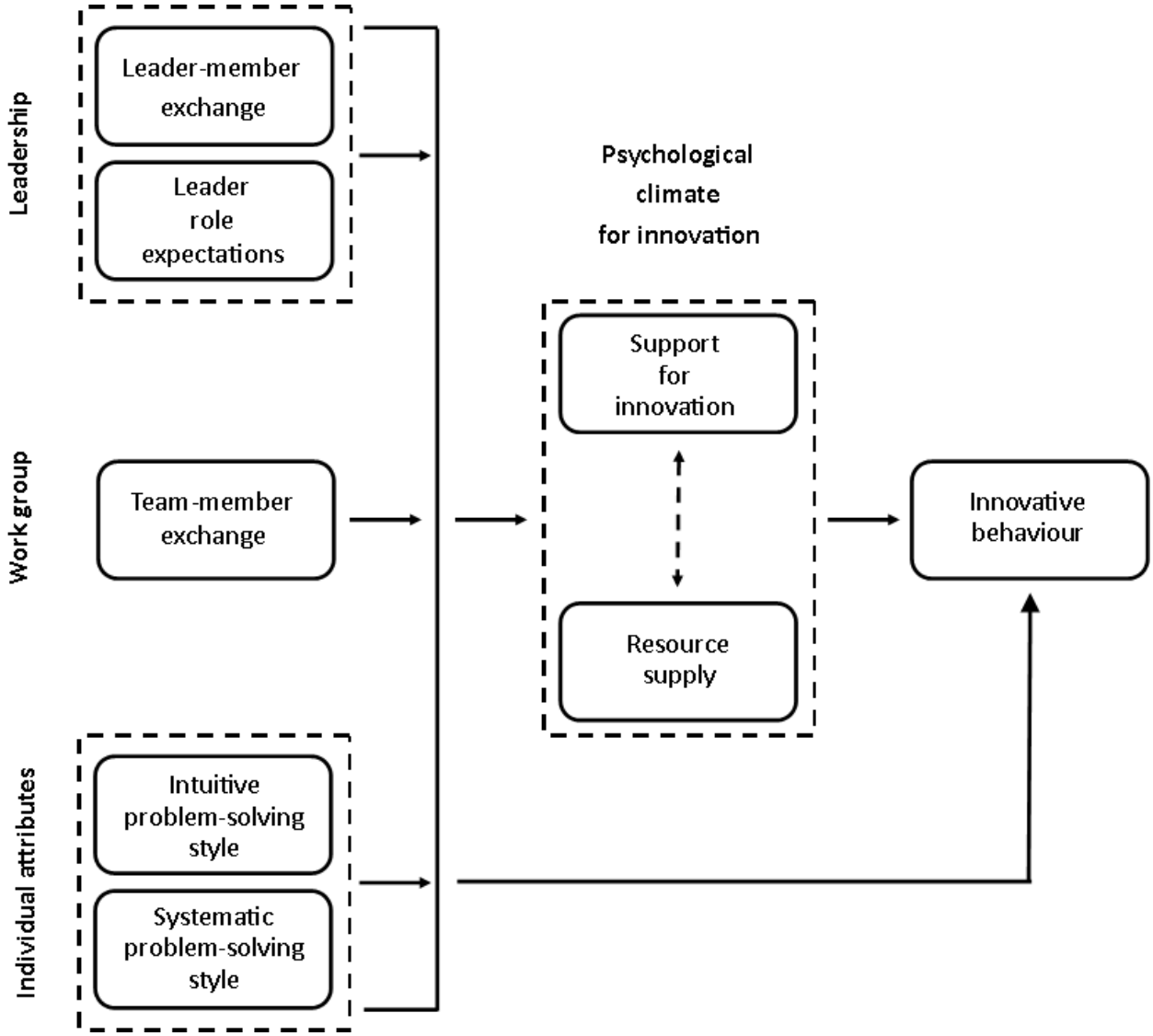

Figure 2.12: Determining innovative behaviour: A hypothetical model

Source: Scott and Bruce, 1994: 583.

Scott and Bruce (1994: 583) then investigated specific variables attributed to each of the categories of factors in their model (Individual, Work group, Leadership, Climate for innovation) to determine their influence on IIB.

The investigation of Scott and Bruce (1994) was the earliest study found where particular variables were investigated for their theorised relationship with the construct of IIB.

2.5.5.2 The study of Yuan and Woodman

The second example of an investigation into IIB is the study of Yuan and Woodman (2010: 323), which specifically investigated why employees engage in IIB.

Yuan and Woodman (2010: 323) examined how employees' innovative behaviour is explained by expectations for such behaviour to affect job performance (expected positive performance outcomes) and image inside their organisations (expected image risks and expected image gains).

The model of Yuan and Woodman (2010: 326) also had IIB as the dependent variable, and specifically investigated the independent variables as intermediate psychological processes, shaped by contextual and individual difference factors, including perceived organisational support for innovation, supervisor relationship quality, job requirement for innovativeness, employee reputation as innovative, and individual dissatisfaction with the status quo. Yuan and Woodman (2010: 327) verified that the chosen antecedents had been selected based on West and Farr's (1989) theoretical framework of individual innovation, and presented five major types of factors which are significant for individual innovation at work. The model is shown in Figure 2.13 below.

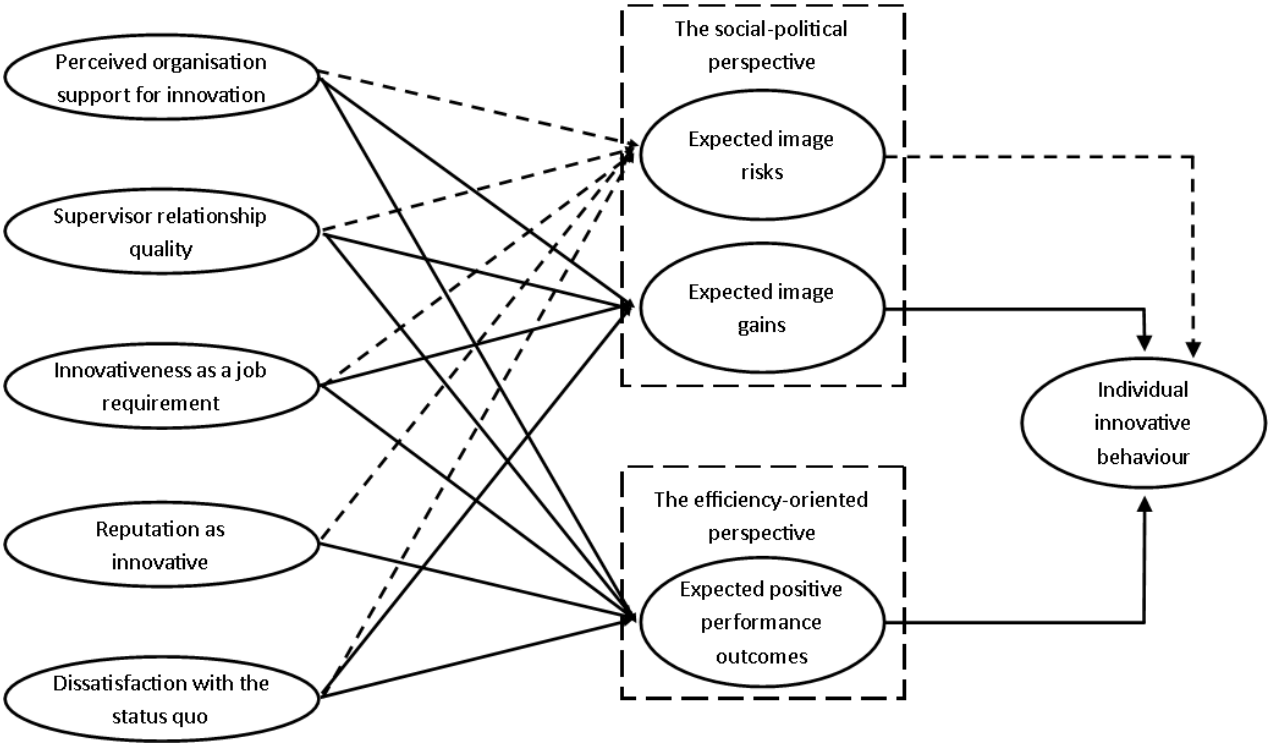

Figure 2.13: Explaining innovative behaviour using performance and image outcome expectations

Source: Yuan and Woodman, 2010: 326.

Since this study of Yuan and Woodman (2010) explicitly set out to investigate psychological processes that would explain how and why different individual and contextual antecedents affect innovative behaviour, a brief explanation of the conceptualisation of their model is relevant.

The origin of Yuan and Woodman's theory is that people act on the basis of consequences or, more specifically, the expected consequences of their behaviour, according to behavioural theories such as the expectancy theory of motivation (Vroom, 1964, cited in Yuan & Woodman, 2010: 394). Yuan and Woodman (2010: 324) further concluded that prior research has suggested that expected payoffs or outcomes of innovative behaviour can be important psychological considerations behind individual innovation; however, studies that directly theorise and test the effects of these outcome expectations are noticeably missing. Reasoning that scholars still lack comprehension of what consequences are important for innovative behaviour and how the expectations for these consequences affect employee innovation in the workplace, Yuan and Woodman (2010: 324) advanced two perspectives to examine how an employee's innovative behaviour is affected, namely the efficiency-oriented perspective and the social-political perspective. Yuan and Woodman (2010) consequently examined how an employee's innovative behaviour is affected by their expectations for such behaviour's potential influence on job performance (expected positive performance outcomes – based on the efficiency-oriented perspective) and the employee's image inside the organisation (expected image risks and expected image gains – based on the social-political perspective).

Yuan and Woodman (2010: 325) explained that the efficiency-oriented perspective which is based on findings in the literature (Abrahamson, 1991; Rogers, 1983; Wolfe, 1994, all cited in Yuan & Woodman, 2010: 325) is that one major reason people innovate in the workplace is to bring performance gains: "New technologies are introduced and new work methods are applied because these are 'better' than the existing ones and are expected to bring performance improvement and efficiency gains". Expected performance outcomes are positive when employees believe that their innovative behaviours will bring performance improvement or efficiency gains for their work roles or work units. Therefore, following the efficiency-oriented perspective in comprehending innovation, Yuan and Woodman (2010: 325) argued that employees are more likely to engage in innovative behaviour when they expect such behaviour to benefit their work.

Yuan and Woodman (2010: 325) further explained that the social-political perspective is based on the rationale that people's reality is – at least partially – socially constructed. Individual behaviours have both technical and symbolic functions. Regardless of whether the introduction of new ideas will help to improve efficiency or performance, the act of engaging in innovative behaviours is an indication; it conveys information about an individual to the social context. Other people's potential perceptions or impressions are important determinants of individual behaviour because such impressions influence other's reactions to the individual and therefore the possibility for the

individual to get the necessary resources and social support to achieve goals (Leary & Kowalski, 1990; Tedeschi & Riess, 1981, both cited in Yuan & Woodman, 2010: 325). Therefore, following the social-political perspective, Yuan and Woodman (2010: 325) argued that firstly, potential image risks will constrain employee innovativeness. An employee may choose to "play it safe" and avoid "rock the boat" innovative behaviours in order to look socially appropriate and to prevent negative social evaluations, i.e. expected image risks. Secondly, employees may engage in innovative behaviours as a deliberate effort to improve image. An employee may suggest new ideas to a supervisor in order to appear competent and conscientious, i.e. expected image gains.

Yuan and Woodman (2010) affirmed that both the organisational context which an employee is embedded in, and the individual characteristics of the employee, affect beliefs about what consequences will result from innovative behaviour.

2.5.5.3 The study of Baer

Baer (2012) also conducted a helpful study to investigate what motivates individuals to take action on their potentially useful ideas.

Baer's (2012: 1102) study considered both people's motivation to engage in idea implementation ("implementation instrumentality") and their network ability ("their ability to cultivate and use their social networks") and consequently found that individuals are able to improve the odds of their ideas being realised when they expect positive outcomes to be associated with their implementation efforts; and when they are skilled networkers. Baer (2012: 1105) based the use of "implementation instrumentality" for his study on the theory of Yuan and Woodman (2010) which claims that the extent to which individuals expect positive outcomes to be associated with their implementation efforts, serves as an important motivator for people to engage in innovative behaviour.

The link between being a skilled networker and implementation success is rooted in the argument that individuals cannot implement ideas in an organisation on their own, and they need to forge the "type of social relationships that provide access to resources such as sponsorship and advocacy" (Baer, 2012: 1107).

What also makes Baer's (2012: 1103) study a valuable complement to understand what motivates people to take action on a potentially useful idea, is the fact that Baer assumes a person-centric perspective on innovation.

Similar to the finding of Hammond *et al.* (2011: 97) on the strong influence of intrinsic and extrinsic motivation on implementation, Baer (2012: 1115) also suggested that the implementation of ideas is influenced by intrinsic motivational considerations (e.g. sense of accomplishment, increased autonomy), and also by extrinsic motivational considerations, such as monetary, career, and

reputational benefits. However, Baer's (2012) study also found that these motivational forces do not directly shape idea implementation, but only do so in conjunction with the creativity of people's ideas as well as certain abilities or relational features. Thus, the findings in Baer's (2012) study extend earlier work and demonstrate motivation as a moderator of the link between idea generation and idea implementation.

Lastly, it is noteworthy that the study of Baer (2012: 1104) also made a strong case for support for innovation being one of the most powerful predictors of implementation.

2.6 SUMMARY

In Chapter 1 of this study, the importance and value of innovation were argued, succeeded by an analysis of the definition of innovation and the main theories which have been used to investigate innovation.

In this chapter, an approach for studying innovation was laid out for this study, based on an examination of previous meta-analyses of the subject matter. This led to the conclusion that innovation needs to be investigated on both the individual and organisational levels, taking the individual as the source of innovation, but also recognising that innovation happens in a social system in the context of the organisation.

The review of the constructs of idea generation and idea implementation led to the conclusion that the implementation of ideas is actually made up of multifaceted behaviour, which was then defined as IIB.

Subsequent to defining the construct of IIB, the theory on implementation and the relevant factors that influence IIB were examined.

The investigation of the factors that influence IIB on an individual level and on an organisational level, led to the conclusions described in Table 2.12 below.

Table 2.12: Conclusions on individual-level factors and organisational-level factors that influence IIB

Conclusion theme	Description
Implementation climate	The literature on innovation implementation revealed that an organisation's implementation climate is a critical element concerning the implementation of ideas (Klein & Sorra, 1996; Dong *et al*., 2008; Taylor & McAdam, 2004; Klein *et al*., 2001; Sawang & Unsworth, 2011). Concerning the implementation climate, support from managers surfaced as one of the factors with a significant influence on the implementation climate (Angle & Van de Ven, 1989; Beer, 1988; Leonard-Barton & Krauss, 1985; Nadler & Tushman, 1989; Nutt, 1986, all cited in Klein & Sorra, 1996: 1074; Klein & Knight, 2005; Hunter *et al*., 2007; Sawang & Unsworth, 2011).
Support for innovation	The construct of support for innovation was also included in the theoretical models of IIB (West & Farr, 1989; Hammond *et al*., 2011); and support for innovation was included as a variable in all the studies that specifically investigated IIB (Scott & Bruce, 1994; Yuan & Woodman, 2010; Baer, 2012).
	Thus, support for innovation is a key area of the organisational context to consider when trying to improve the success rate of the implementation of employees' ideas.
Individual-level factors	Regarding the individual-level factors related to idea implementation, autonomy and the ability and motivation of an individual to gain support and assistance in the organisation to aid implementation were identified as some of the key factors influencing the successful implementation of ideas (Axtell *et al*., 2000; Hammond *et al*., 2011; Cadwallader *et al*., 2010; Baer, 2012; Unsworth & Parker, 2003).
Psychological- and cognitive factors	There are also psychological- and cognitive factors that play a role in how individuals take action on ideas, and more specifically, personal initiative, motivation, and proactive behaviour have been shown to be positive predictors of idea implementation by individuals (Hammond *et al*., 2011; Cadwallader *et al*., 2010; Unsworth & Parker, 2003; Grant & Ashford, 2008; ; Fuller & Marler, 2009; Bateman & Crant, 1993; Wang & Lin, 2012, Stajkovic & Luthans, 1998; Axtell *et al*., 2000; Tierney & Farmer, 2002; Onyishi & Ogbodo, 2012).
Capability beliefs	Ford (1996: 1121) referred to "capability beliefs" in his influential theory of creative action, and listed a number of references that support the notion that people's expectations regarding their abilities to successfully undertake a specific behaviour facilitates IIB.
	The basic premise of the relationship of this "capability beliefs" with innovation, is that since innovation issues are complex, they will be more favourably evaluated by people with high self-perceptions about their ability to manage challenging and unstructured situations (Tabak & Barr, 1996: 389). This "capability beliefs" is contained in the construct of self-efficacy (Bandura, 1982: 122, as introduced by Albert Bandura, 1977).

Conclusion theme	Description
Self-efficacy	A number of studies make reference to the positive effects of self-efficacy (S-E) on individual innovation (e.g. Axtell *et al*., 2000: 266; Tierney & Farmer, 2002: 1138; Kumar & Uzkurt, 2010: 1; Onyishi & Ogbodo, 2012: 2; Hammond *et al*., 2011: 92). However, the construct of S-E has not been studied in depth in the context of IIB in organisations (Gerber *et al*., 2012: 1).
	S-E has been empirically investigated in the area of entrepreneurship (Boyd & Vozikis, 1994; Barakat *et al*., 2014; Rutherford & Holt, 2007), and since the nature of entrepreneurship is to proactively produce effective solutions to problems and opportunities (Frese, 2007: 152) – a description which resonates well with the meaning of innovation – the relationship between S-E and IIB seemed worth investigating.

Source: Author's own.

The arguments above put forward two main constructs deemed appropriate for the objective of this study, namely to investigate idea implementation by employees in an organisation on an individual level and on an organisational level. These constructs were perceived organisational support (POS), as an organisational-level construct; and self-efficacy (S-E) as an individual-level construct.

A review of the literature on S-E and its relationship with IIB is provided in Chapter 3, and a review of the literature on POS and its relationship with IIB is provided in Chapter 4.

CHAPTER 3
THE ROLE OF SELF-EFFICACY IN IDEA IMPLEMENTATION

3.1 INTRODUCTION

The purpose of this chapter is to give an overview of S-E and examine the underlying relationships between S-E and IIB. The attributes related to S-E in the context of IIB are also reviewed and lastly a concise overview is given of how S-E is treated as a variable in research.

3.2 OVERVIEW OF SELF-EFFICACY

The construct of S-E was originally introduced by Albert Bandura (1977). In this section, a brief overview is given of the construct, including the definition of S-E, sources of S-E beliefs, efficacy-activated processes and the effects of S-E beliefs. After this overview, it is verified that S-E is context specific, leading to innovation S-E as a specific type of S-E and lastly the major criticisms on S-E are reviewed.

3.2.1 Definition of self-efficacy

S-E is defined as a personal judgment of “how well one can execute courses of action required to deal with prospective situations” and S-E beliefs determine how people feel, think, motivate themselves and behave (Bandura, 1982: 122). More simply put, S-E is about what an individual believes they can accomplish using their skills under certain circumstances.

Unlike efficacy, which is the power to produce an effect, the term “self-efficacy” is used, by convention, to refer to the belief (accurate or not) that one has the power to produce that effect by completing a given task or activity related to that competency. S-E is therefore the belief in one's efficacy.

Bandura (1977: 193) also differentiated between outcome expectancy and efficacy expectation. An outcome expectancy is defined as a person's assessment that a given behaviour will lead to a certain outcome. An efficacy expectation is the belief that one can successfully execute the behaviour required to produce the outcome. This difference is presented schematically in Figure 3.1 below.

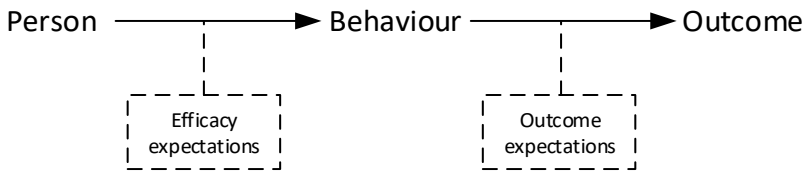

Figure 3.1: Diagrammatic representation of the difference between efficacy expectations and outcome expectations

Source: Bandura, 1977: 193.

Bandura (1977: 193) explained that the reason for differentiating between outcome- and efficacy expectations is that individuals can believe that a particular course of action will produce a certain outcome, but if they are uncertain whether they can perform the necessary activities, such information does not influence their behaviour.

S-E beliefs are concerned with individuals' perceived capabilities to produce results and to attain designated types of performance, and therefore these beliefs differ from related conceptions of personal competence that form the core constructs of other theories (Pajares, 1997: 3). S-E judgments are more task, situation and context specific, and individuals make use of these judgments in reference to some type of goal (Pajares, 1997: 3).

The theory of S-E lies at the centre of Bandura's (1986) social cognitive theory, which posits that an individual's actions and reactions, including social behaviours and cognitive processes, are influenced by the actions that individual has observed in others.

S-E is not a personality trait. Personality is considered a fairly stable pattern of psychological behaviour (thoughts, feelings, and actions) and influences how one will act in response to diverse circumstances (Quinn, Faerman, Thompson & McGrath, 2003, cited in Redmond, 2016). Personality does not determine behaviour; behaviour arises in a context, such as work. According to Berens *et al.* (2001, cited in Redmond, 2016), "personalities reflect the requirements of the contexts as well as our innate tendencies and how we have adapted to these contexts over time". Hence, an individual's behaviour is determined by the requirements of the situation. Bandura (1997, cited in Redmond, 2016) asserted: "Efficacy beliefs do not share the major properties ascribed to personality traits". S-E is therefore not considered a personality trait; instead, it is considered a situation-specific construct.

Furthermore, S-E should not to be confused with self-esteem, as the conceptual difference between S-E and self-esteem is not always clear to researchers or in investigations (Pajares, 1997: 10). S-E differs from self-esteem in that it's a judgment of specific capabilities rather than a general feeling of self-worth (Beck, 2008, cited in Redmond, 2016). Pajares (1997: 10) also pointed out that self-esteem is measured at a more general level and is less sensitive to context, and that

self-esteem judgments can be domain specific, but are not task specific. To explain the difference, Redmond (2016) gave the following example: “a person who is a terrible rock climber would probably have poor self-efficacy with regards to rock climbing, but this will not affect self-esteem if the person doesn’t rely on rock climbing to determine self-worth”.

To better comprehend the nature of S-E beliefs, an explanation follows on how S-E beliefs are acquired, how they influence motivational and self-regulatory processes, and how they differ from similar or related conceptions of self-belief.

3.2.2 Sources of self-efficacy beliefs

According to Bandura (1977: 195), expectations of personal efficacy are based on four major sources of information, namely: performance accomplishments, vicarious experience, verbal persuasion, and emotional arousal (physiological states). A short description for each of these sources are provided in Table 3.1 below.

Table 3.1: Sources of self-efficacy beliefs

Source	Description
Performance accomplishments	This source of S-E information is based on past experiences. In essence, individuals gauge the effects of their actions, and their interpretations of these effects help create their efficacy beliefs. Outcomes interpreted as successful, raise S-E; those interpreted as failures lower it. According to Bandura (1977: 195), performance accomplishments, or past experiences, are the most influential source of S-E information because they provide the most authentic evidence of whether one can muster whatever it takes to succeed.
Vicarious experience	This source of S-E information is based on a person watching another perform and then comparing own competence with the other individual’s competence. If a person sees someone similar to them succeed, it can increase their S-E. However, the opposite is also true; seeing someone similar fail can lower S-E (Bandura, 1977: 197). Bandura argued that because this source of S-E information relies on inferences from social comparison, it is a less dependable source of information about one's capabilities than direct evidence of personal accomplishments.
Verbal persuasion	This source of S-E information manifests as direct encouragement or discouragement from another person (Bandura, 1977: 198). Encouragement is generally more effective at increasing a person's S-E than discouragement is at decreasing it. Bandura (1977: 198) pointed out that these persuasions are a weaker source of efficacy information than mastery accomplishments or vicarious experiences.
Emotional arousal (physiological states)	This source of S-E information refers to information provided through physiological states such as anxiety, stress, arousal, fatigue, and mood states. It is not the sheer intensity of emotional and physical reactions that is important, but rather how they are perceived and interpreted. People who have a high sense of efficacy are likely to view their state of affective arousal as an energising facilitator of performance, whereas those who are beset by self-doubts regard their arousal as a debilitator (Bandura, 1977: 199).

Source: Bandura, 1977: 195.

The sources of information that people use to judge their level of S-E have now been addressed. Bandura (1977: 200) drew a distinction between information contained in environmental events, and information processed and transformed by the individual. This means that the mentioned sources of efficacy information are not directly translated into judgments of competence. Individuals interpret the results of events, and these interpretations provide the information on which judgments are based (Pajares, 1997: 4). Next, the four major psychological processes through which S-E affect human functioning are briefly reviewed.

3.2.3 Efficacy-activated processes

The four major psychological processes through which S-E beliefs affect human functioning are cognitive processes, motivational processes, affective processes and selection processes (Bandura, 1994: 72). A brief description of each of these processes are provided in Table 3.2 below.

Table 3.2: Psychological processes through which S-E beliefs affect human functioning

Process	Description
Cognitive processes	These are thinking processes involved in the acquisition, organisation and use of information. Most courses of action of people begin with them thinking about it. People's thoughts about their efficacy shape the types of expected scenarios they construct and rehearse. People who have a high sense of efficacy, envision successful consequences that positively supports performance. People with a low sense of efficacy, envision outcomes of failure and think about the things that can go wrong (Bandura, 1994: 73).
Motivational processes	These concern people's activation to action. The level of motivation is reflected in choice of courses of action, and in the intensity and persistence of effort. Self-beliefs of efficacy play a key role in the self-regulation of motivation. Most human motivation is cognitively generated. People motivate themselves and guide their actions in advance through forethought. They form beliefs about what they can do. They anticipate likely outcomes of potential actions. They set goals for themselves and plan courses of action designed to realise valued futures (Bandura, 1994: 73).
Affective processes	These are processes which regulate emotional states and evoke emotional reactions. People's belief in their coping abilities affects how much stress they experience in threatening or challenging situations, as well as their level of motivation. Perceived S-E to exercise control over stressors plays a central role in the development of anxiety. People who believe they can exercise control over challenging situations, experience low development of anxiety. But people who believe they cannot manage challenging situations experience high development of anxiety (Bandura, 1994: 74).
Selection processes	These are the processes through which people make choices. People develop different competencies, interests and social networks through the choices they make, and these choices eventually determine their life courses. Beliefs of S-E influence choice behaviour which affect the direction of personal development (Bandura, 1994: 75).

Source: Bandura, 1994: 72.

The sources of S-E beliefs and the psychological processes through which S-E beliefs affect human functioning have been reviewed. The effects of S-E beliefs are discussed next.

3.2.4 Effects of self-efficacy beliefs

S-E beliefs influence motivational and self-regulatory processes in several ways. They influence the choices people make and the courses of action they pursue (Pajares, 1997: 4).

The basic principle behind S-E theory is that individuals are more likely to engage in activities for which they have high S-E and less likely to engage in those they do not (Van der Bijl & Shortridge-Baggett, 2002, cited in Redmond, 2016; Pajares, 1997: 4).

S-E beliefs also help determine how much effort people will put into an activity, how long they will persevere when confronted with challenges, and how resilient they will prove in the face of adverse situations. The higher the sense of efficacy, the greater the effort, persistence, and resilience people will exert. Efficacy beliefs also influence the amount of stress and anxiety individuals experience as they engage in a task and the level of accomplishment they realise (Pajares, 1997: 4).

Strong S-E beliefs enhance human achievement and personal wellbeing in many ways. Pajares (1997: 4) asserted that people with a strong sense of personal competence in a specific domain, approach challenging undertakings in that domain as: “challenges to be mastered rather than as dangers to be avoided, have greater intrinsic interest in activities, set challenging goals and maintain a strong commitment to them, heighten their efforts in the face of failure, more easily recover their confidence after failures or setbacks, and attribute failure to insufficient effort or deficient knowledge and skills which they believe they are capable of acquiring”. Pajares (1997: 4) concluded that as a result of these influences, S-E beliefs are strong determinants and predictors of the level of accomplishment that individuals finally attain.

3.2.5 Self-efficacy is context specific

S-E is a judgment of specific capabilities (Beck, 2008, cited in Redmond 2016) and S-E judgments are both task and situation specific (Pajares, 1997: 3). Pajares described it as: “…self-efficacy is a context specific assessment of competence to perform a specific task” and further reasoned that individuals make use of these competence assessments in reference to some type of goal. Therefore, a person can have high S-E in one area, but low self-efficacy in another area, and for certain very specific tasks and/or skills (Ford, 1996: 1115; Wilson, Kickul & Marlino, 2007: 389). This leads to the further conclusion that there is more than one form of S-E and it is also domain specific (Ford, 1996: 1115).

There is sufficient evidence of S-E being studied across various domains of behaviour, especially in the areas of academic motivation of scholars and students, the health sciences and self-regulation (Pajares, 1997: 1). In an assessment on the state of S-E research, Pajares (1997: 1) listed the following areas to which S-E beliefs have been related:

- Clinical problems such as phobias;
- Addiction and depression;
- Social skills;
- Assertiveness;
- Stress in a variety of contexts;
- Pain control;
- Athletic performance; and
- Smoking behaviour.

The literature also revealed that different types of S-E have been identified and studied. The following types are noteworthy for this study, as listed in Table 3.3 below.

Table 3.3: Different types of S-E identified in the literature

Type of S-E	Definition
Entrepreneurial S-E	Defined as the strength of a person's belief that they are capable of successfully performing the various roles and tasks of entrepreneurship (Boyd & Vozikis, 1994).
Creative S-E	Defined as employees' belief that they can be creative in their work roles (Tierney & Farmer, 2002).
Job S-E	Defined as an employee's view of their capacity to conduct the overall job (Chen, Gully & Eden, 2001).
Role-breadth S-E	Defined as individual confidence in performing broader and more proactive activities that extend beyond prescribed technical requirements of the job itself (Parker, 1998; Axtell *et al*., 2002).
Social S-E	Defined as an individual's confidence in their ability to engage in the social interactional tasks necessary to initiate and maintain interpersonal relationships (Smith & Betz, 2000).
Technological S-E	Defined as the belief in one's ability to successfully perform a technologically sophisticated new task (McDonald & Siegall, 1992).

Source: Author's own.

The purpose of the preceding section was to argue that S-E can be task-, domain- and context specific, and various types of S-E have been identified and studied. The developments concerning "innovation self-efficacy" are discussed in the next section.

3.2.6 Innovation self-efficacy

A development in S-E research which is relevant for this study, is the construct of “innovation self-efficacy”, which has been theorised by Gerber *et al*. (2012). Gerber *et al*. (2012: 1) defines “innovation self-efficacy” as an individual’s belief in their ability to accomplish tasks necessary for innovating.

Gerber *et al*. (2012: 1) stated that they think that although resource-intensive efforts to foster innovation in organisations are plentiful, there is an inadequate understanding of how to measure the impact of these interventions on individuals’ judgment of their own innovation capabilities. Gerber *et al*. (2012) commenced with early stage work to develop and validate a survey measure for innovation self-efficacy (ISE).

The authors concluded that although task-specific survey measures applicable to engineering innovation have been developed to assess self-efficacy of creativity, engineering design, modelling, tinkering, and entrepreneurship, scholars have yet to develop an integrated measure that relates to a collection of tasks associated specifically with innovation (Gerber *et al*., 2012: 2). The indicators the authors theorised as being significant for ISE are discussed in more detail below in Section 3.4 (Gerber *et al*., 2012).

3.2.7 Criticism of self-efficacy

It appears that the main criticisms of S-E are based on the distinctions that Bandura (1978) drew between S-E beliefs and outcome expectations, and on the roles of S-E and outcome expectations which are not entirely clear (Pajares, 1997: 5).

Bandura (1984, cited in Pajares, 1997: 5) argued that the outcomes people expect are largely dependent on their judgments of what they can accomplish. As a consequence, outcome expectations should not make an independent contribution to predictions of behaviour when S-E perceptions are controlled.

Bandura (1986) drew a distinction between the roles of S-E beliefs versus those of outcome expectations in influencing motivation and predicting behaviour. According to Bandura (1986: 391), judgments of personal competence to engage in a behaviour differ from "judgments of the likely consequence that behavior will produce". Efficacy beliefs in part determine outcome expectations, that is to say individuals who expect success in a particular enterprise anticipate successful outcomes.

Some researchers contend that in many cases, S-E judgments are themselves dependent on outcome expectations and that Bandura (1978) oversimplified the relationship between the two constructs (Pajares, 1997: 5).

Eastman and Marzillier (1984, cited in Redmond, 2016) outlined three main criticisms to Bandura's S-E theory: The first was ambiguity and lack of definition in S-E; the second included methodological deficiencies which could cast doubt on the "published relationship between the empirical findings and self-efficacy"; and the third stated that claims and conclusions made by Bandura were not adequately evaluated, and more precise definitions and modification of assessment procedures are needed.

With regards to the conceptual problems of S-E, Eastman and Marzillier (1984, cited in Redmond, 2016) thought that "efficacy expectations were definite in such a way that included within them expectations of outcome, and thus could not be regarded as conceptually distinct".

Bandura had sought to make a distinction between S-E and outcomes but others found some of his statements to be misleading in this regard. One specific statement, "the conviction that one can successfully execute the behavior to produce the outcomes," was the focus of much criticism and debate over the true difference between outcomes and efficacy. Kazdin (1978, cited in Redmond, 2016) found the concepts of S-E and outcome expectations to be "very closely related".

Bandura replied to this criticism by stating that the outcomes are conditional upon the behaviour and that the critics were "misreading the definition of efficacy" (Bandura, 1978, cited in Redmond, 2016).

Redmond (2016) claimed that further criticism of S-E maintains that it is "impossible to exclude outcome considerations from efficacy expectations". It is human nature to be aware and concerned with the outcomes in performing a task. While Bandura's studies focused on discrete tasks, the applications for S-E move beyond discreet tasks with limited outcomes. Redmond (2016) is of the opinion that while critics of Bandura and S-E agree that there is value in Bandura's experiments, it is doubted that S-E and outcomes can be limited and distinct on a larger scale or in application of the theory.

3.2.8 Summary of self-efficacy

In this section, a definition of the construct of S-E was provided, the sources of S-E beliefs were identified, the four major psychological processes through which S-E beliefs affect human functioning were specified, the effects of S-E on human functioning were discussed, S-E was determined as context specific, and the major criticisms of S-E were listed.

The literature revealed that research on S-E has been well tested and well supported in the many different aspects of S-E. Redmond (2016) compiled a comprehensive list of research findings in support of S-E and these are listed in Table 3.4 below, including the references for the findings of Redmond.

Table 3.4: Research findings in support of self-efficacy

Research finding	References cited by Redmond (2016)
High S-E individuals persist longer in the face of difficulty and are extremely resilient in the face of failure.	Bandura, 1982.
High S-E individuals are generally more content with their work and lives.	Judge, Locke, Durhamn & Kluger, 1998.
High S-E individuals set higher goals for themselves.	Bandura & Cervone, 1986.
High S-E individuals are more committed to their goals.	Locke, Frederick, Lee & Bobko, 1984.
High S-E individuals generate more effective task strategies to facilitate goal attainment and respond more optimistically to negative feedback than low S-E individuals.	Locke & Latham, 1990.
Strengthening S-E augments goal attainment motivation.	Bandura, 1986.
Feedback and S-E are necessary for effective goal-setting.	Latham & Locke, 1991.
S-E has been found to lead to higher performance.	McIntire & Levine, 1991; Mathieu, Martineau & Tannenbaum, 1993; Eden & Zuk, 1995; Locke & Latham, 1990; Stajkovic & Luthans, 1998.
High S-E individuals succeed more often and better than individuals with low S-E.	Mitchell, Hopper, Daniels, George-Falvy & James, 1994.
High S-E individuals habitually work harder and persevere while low S-E individuals frequently quit.	Bandura, 1986.
Individuals who perform well develop high S-E.	Davis, Fedor, Parson & Herold, 2000.

A review of how S-E has been studied in relation to innovation is provided in the next section, and an argument is made for the relationship between S-E and IIB.

3.3 THE UNDERLYING RELATIONSHIP BETWEEN SELF-EFFICACY AND IIB

It was established in Section 2.4.4 that IIB is a challenging undertaking. IIB has an element of novelty or newness (Baregheh *et al*., 2009: 1334) in the workplace, and typically involves complex, non-routine behaviour (Sproull & Hofmeister, 1986: 44; Ford, 1996; 1116). In addition, IIB is influenced considerably by social and political factors (Baer, 2012: 1107; Daniels *et al*., 2011: 584), and because of the element of newness (Alexander & Van Knippenberg, 2014: 425), uncertainty and risk are inherent qualities of innovative behaviour.

It was also established in Section 2.5.4 that the following traits positively influence the implementation of ideas by individuals: personal initiative (Daniels *et al*., 2011), motivation (Mitchell, 1982; Cadwallader *et al*., 2010; Baer, 2012; Ryan & Deci, 2000), proactivity (Bateman & Crant, 1993; Grant & Ashford, 2008; Unsworth & Parker, 2003; Fuller & Marler, 2009), and goal-orientation (Yan, 2011; Oldham & Baer, 2012; Alexander & Van Knippenberg, 2014; Montani *et al*., 2014; Hirst *et al*., 2009).

Effort, persistence, and perseverance are also characteristics that have been associated with IIB (Unsworth & Parker, 2003: 5).

Relating the nature of IIB to the individual traits that have been positively associated with IIB, the apparent influence of S-E on IIB is based on the argument that innovation issues are risky, challenging and complex, and these issues will be more favourably evaluated by people with high self-perceptions about their ability to manage challenging and unstructured situations with a potentially uncertain outcome (Tabak & Barr, 1996: 389). Kumar and Uzkurt (2010: 2) described the relationship between S-E and innovation as: “individuals with high levels of self-efficacy are likely to have higher belief in their own ability to make new products, processes and changes happen and accordingly may function as highly innovative employees or be more likely to be the force driving an innovative workplace”.

The relationship between S-E and taking action to implement ideas, i.e. IIB, is further built on the notion that high S-E individuals attempt to proactively manage situations and creatively solve problems (Bandura, 1989: 731). On the other hand, people who doubt their capabilities, shy away from difficult tasks. They have low aspirations and weak commitment to the goals that they choose to pursue (Bandura, 1989: 734). Parker and Collins (2010: 642) also viewed S-E as being specifically important for IIB, because it raises one’s feelings of control and the perceived likelihood of success; it also leads people to persist more and to choose more difficult goals, both of which are important for idea implementation in an organisation.

Concerning the traits of persistence and the intrinsic risk of failure associated with innovation, it was also established that high S-E individuals persist longer in the face of difficulty and are extremely resilient in the face of failure (Bandura, 1982, cited in Redmond, 2016).

The positive effect of goal-directed strategies on enacting effective innovative courses of action is also recognised (Montani *et al.*, 2014: 662) and research evidenced that high S-E individuals are more committed to their goals (Locke, Frederick, Lee & Bobko, 1984, cited in Redmond, 2016), generate more effective task strategies to facilitate goal attainment (Locke & Latham, 1990, cited in Redmond, 2016), and that strengthening S-E enhances goal attainment motivation (Bandura, 1986, cited in Redmond, 2016).

Based on the above arguments, it is evident that there will be underlying relationships between S-E and IIB, and a number of studies have deliberated the positive effect of S-E on individual innovation (e.g. Axtell *et al.*, 2000; Tierney & Farmer, 2002; Stajkovic & Luthans, 1998; Kumar & Uzkurt, 2010, Onyishi & Ogbodo, 2012, Hammond *et al.*, 2011).

However, only a few sources were found in the literature where S-E, or a type of S-E, had been studied with regards to IIB in the context of organisational innovation. These studies are discussed in Table 3.5 below.

Table 3.5: Studies linking S-E and IIB

Reference	Description
Tierney & Farmer, 2002	The study by Tierney and Farmer (2002) investigated the construct of "creative self-efficacy", its antecedents and its relationship to creative performance. Tierney and Farmer (2002: 1138) defined "creative performance" as "…the generation of domain-specific, novel, and useful outcomes" and "creative self-efficacy" as "…the belief one has the ability to produce creative outcomes". However, Tierney and Farmer (2002) did not explain exactly what is meant with "outcomes" and it was not clear if the concept only referred to creative ideas, or also included the implementation of the ideas.
Kumar & Uzkurt, 2010	The study by Kumar and Uzkurt (2010) investigated the effect of S-E on the innovativeness of professionals within a cultural context. Kumar and Uzkurt (2010: 1) pointed out that the link between S-E and innovativeness has not been studied and their research hypothesised a relationship between S-E and innovativeness of an individual, mediated by cultural dimensions. The type of innovation in the research of Kumar and Uzkurt (2010: 4) was defined as "consumer innovativeness", which concerns new product adoption behaviour. Hence, this study was more focused on innovation adoption than on innovation implementation.
Ahlin, Drnovšek & Hisrich, 2014	Ahlin, Drnovšek and Hisrich (2014) studied the role of an entrepreneur's personal efficacy-related beliefs in the innovation pursuits of small-to-medium enterprises (SMEs). The study of Ahlin *et al*. (2014: 115) showed that both an entrepreneur's creativity and perceived S-E beliefs – directly and in interaction – affect a firm's product and process innovations. The study of Ahlin *et al*. (2014: 103) specifically investigated "entrepreneurial self-efficacy" and specifically in the context of SMEs. Conversely, Ahlin *et al*. (2014) did not define the meaning of an "entrepreneur" as opposed to an employee in the context of their study.

Source: Author's own.

The attributes of S-E, in the context of IIB, as revealed in the literature are reviewed in the following section.

3.4 THE ATTRIBUTES RELATED TO SELF-EFFICACY IN THE CONTEXT OF IIB

3.4.1 The formation of self-efficacy beliefs

If an underlying relationship between S-E and IIB exists, it stands to reason that by increasing S-E, IIB will also be positively impacted, and consequently the chances of implementing a potentially useful idea will also increase. It is therefore essential for this study to recognise the attributes of S-E related to IIB.

The sources of information of S-E beliefs, as well as the processes through which S-E beliefs affect human functioning, have been listed and discussed in Section 3.2. Nonetheless, more detail is required to comprehend the information that is drawn by individuals from work experiences and utilised in the formation of S-E. Gist and Mitchel (1992) theoretically reviewed the antecedent processes and information cues involved in the formation of S-E, which are summarised in brief in this section.

In essence, Gist and Mitchell (1992: 189) noted that individuals engage in a process whereby they assess their personal and situational resources and constraints, and subsequently rely on these assessments to yield interpretive data which they then use to form personal efficacy judgments.

Figure 3.2 below presents a simplified view of the process of Gist and Mitchell (1992: 189) by which S-E is formed. The major emphasis is placed on those judgments and information categories that precede the efficacy assessment. Gist and Mitchell (1992: 189) listed three types of assessment processes which are involved in forming S-E:

- First, there is an analysis of task requirements. This analysis produces conclusions about what it takes to perform at various levels. This task analysis should be most explicit when the task is fairly novel or when it has been observed only. When the task has been performed personally and frequently in the past, the individual is likely to rely more heavily on their interpretation of the causes of previous performance levels.
- The second form of analysis is typically involved in efficacy judgments: an attributional analysis of experience. This analysis involves the individual's judgments, or attributions, about why a particular performance level occurred.
- Thirdly, there is an examination of self and setting (context) by which the individual assesses the availability of specific resources and constraints for performing the task at various levels. This assessment requires consideration of personal factors (e.g. skill level, anxiety, desire, available effort) as well as situational factors (e.g. competing demands, distractions) that impinge on future performance.

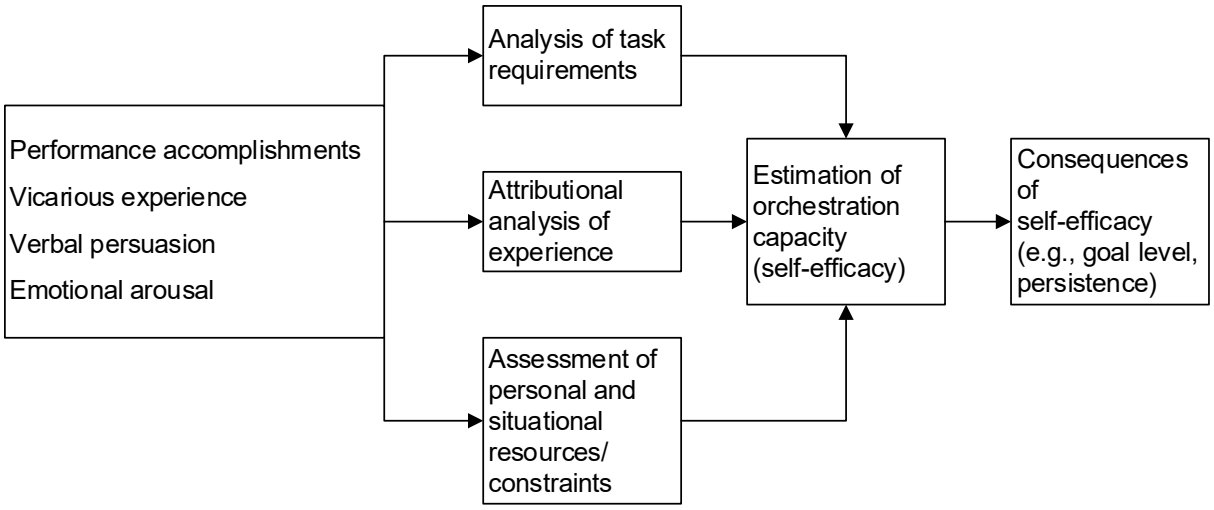

Figure 3.2: A model of self-efficacy performance

Source: Adapted from Gist and Mitchell, 1992: 189.

Gist and Mitchell (1992: 190) concluded that although these three assessment processes are relatively independent, progression through them may occur in an iterative manner, and the relative emphasis on each process may be influenced by the nature of the task itself or by the extent of prior experience with the task. These assessment processes yield information for interpretation, which is used in a summary-level judgment process which defines S-E: the appraisal of execution capability.

Based on the theorised processes on which S-E is formed, Gist and Mitchell (1992: 203) suggested the following strategies for changing S-E and related performance:

- Provide information that gives the individual a more thorough understanding of the task attributes, complexity, task environment (primarily through the use of mastery and modelling experiences), and the way in which these factors can be best controlled.
- Provide training that directly improves the individual's abilities or understanding of how to use abilities successfully in performing the task (primarily by using mastery, modelling, and persuasion experiences).
- Provide information that improves the individual's understanding of behavioural, analytical, or psychological performance strategies or effort expenditure required for task performance (primarily by using modelling, feedback and persuasion).

3.4.2 Attributes of self-efficacy

Tierney and Farmer (2002: 1138) provided an example of where the model of Gist and Mitchell (1992) was used as a conceptual framework to guide their understanding and selection of self-efficacy determinants in the work settings for their study. Tierney and Farmer (2002: 1138) derived

determinants for creative self-efficacy based on personal sources of creative efficacy, namely job knowledge and job self-efficacy.

Personal sources of innovation efficacy have also been identified by Gerber *et al*. (2012: 1) in their preliminary work on innovation self-efficacy (ISE).

Based on their preliminary work (literature review and interview data), Gerber *et al.* (2012: 2) put forward 38 indicators (task-related skills, behaviours or attitudes) of ISE that could be learnt or cultivated in an innovator. To conceptualise their model, Gerber *et al*. (2012) grouped the indicators into nine clusters, namely: communication, creativity, exploration, flexibility, resourcefulness, implementation, iteration, synthesis, and vision. Table 3.6 below exhibits the indicators as grouped per cluster.

Table 3.6: Proposed indicators of innovation self-efficacy

Clusters	Indicators	Description
Vision	Vision	Identify new opportunities.
Exploration	Awareness/Empathy	Pay attention to what is around and adopt others' viewpoints.
	Observation	Imagine and understand how things work.
Synthesis	Information processing	Make connections.
Creativity	Creativity	Have original and unique ideas.
Iteration	Idea testing	Assess ideas for viability, feasibility and desirability.
Resourcefulness	Collaboration	Work with others.
	Knowledge building	Utilise people, tools, and other resources.
	Persistence	Continue to approach problems despite setbacks.
Implementation	Decision making	Set goals and choose how to proceed.
	Risk taking	Go against what is expected or safe if necessary.
Communication	Oral and written communication	Craft and share information through written and oral means.
	Visualisation of information	Translate ideas into visualisations.

Source: Gerber *et al*., 2012: 2.

To more fully comprehend the task-related skills, behaviours or attitudes of ISE related to personal sources as identified by Gerber *et al.* (2012: 2), Table 3.7 below lists the behaviours and practices (revealed in the literature) in support of these indicators, including how they have been measured.

Table 3.7: Behaviours and practices in support of personal attributes of self-efficacy

Attribute	Behaviours and practices in support of attribute	Measurements	Literature references
Vision	Identifying new opportunities. Scanning and searching for information, connecting previously disparate information, and making evaluations on the existence of opportunities.	A measurement instrument was developed (through a content adequacy test) to test for the scanning and search dimension, the association and connection dimension, and the evaluation and judgment dimension.	Gerber *et al*., 2012: 2; Tang, Kacmar & Busenitz, 2012: 81.
Awareness/Empathy	Pay attention to what is around and adopt others' viewpoints. The ability to comprehend another's feelings and to re-experience them oneself.	Kellett, Humphrey and Sleeth (2002: 531) used a seven-item peer report empathy measure from the Emotional Competence Inventory (Boyatzis, Goleman & Rhee, 2000). This measure uses a seven-point Likert type scale anchored by ''slightly characteristic'' and ''very characteristic.'' Sample items are: "shows sensitivity and understanding"; ''accurately reads people's moods, feelings, or nonverbal cues''; ''asks questions to be sure he/she understands another person''; and ''accurately assesses the underlying or root causes of a person's problems".	Gerber *et al*., 2012: 2; Kellett *et al*., 2002: 524.
Observation	Imagine and understand how things work.	Curiosity is important for, among others, continuous learning along the working lifespan, effortful thinking when dealing with complexity, novelty, or ambiguity, and dealing with organisational change. For the assessment of curiosity, the Work-Related Curiosity scale (Mussel, Spengler, Litman & Schuler, 2012) was administered. The scale consists of 10 items and has a one-dimensional structure. A sample item is: "I carry on seeking information until I am able to understand complex issues".	Gerber *et al*., 2012: 2 Mussel, 2013: 454, 460.
Information processing	Make connections.		
Creativity	Have original and unique ideas. Help others generate new ideas. Use new approach for traditional problems. Share knowledge with colleagues. Provide examples to colleagues.	Creativity was assessed by supervisor ratings of six creativity performance items from Tierney, Farmer and Graen (1999) on a six-point Likert scale. A sample item is "This employee tries out new ideas and approaches to problems".	Gerber *et al*., 2012: 2; Tierney & Farmer, 2002: 1142; Tierney *et al*., 1999: 599.

Attribute	Behaviours and practices in support of attribute	Measurements	Literature references
	Like the stimulation of frequent changes.		
Idea testing	Assess ideas for viability, feasibility and desirability. Silvia (2008: 139) tested how well people can identify their most creative idea, and found that people high in openness to experience, in particular, were more discerning than others. Openness is one of the five basic dimensions of individual differences in personality. It has been characterised "in both structural and motivational terms. Openness is seen in the breadth, depth, and permeability of consciousness, and in the recurrent need to enlarge and examine experience" (McCrae & Costa, 1997: 826). Individuals high in openness are thus tolerant of ambiguity and able to make remote and unusual associations; they are also curious, innovative, and imaginative.	The 48-item NEO PI-R Openness scale was used to measure general openness including its six facets (openness to) aesthetics, fantasy, feelings, values, ideas, and actions. Response options followed a five-point Likert-style format from 1 (strongly disagree) to 5 (strongly agree).	Gerber *et al*., 2012: 2 Silvia, 2008: 139; McCrae, 2007: 6; Pace & Brannick, 2010: 231.
Collaboration	Work with others. Able to co-operate effectively across project, functional and organisational boundaries. Embrace sharing of knowledge. Contribute knowledge creation and dissemination. Understanding of how collaboration can constitute a key competitive factor for the organisation. The main characteristic of collaboration for co-creation is a shared purpose, be it making profit, participation experience, recognition without financial rewards, or just for fun. Wagner (1995: 152) defined cooperation as "the willful contribution of personal effort to the completion of interdependent jobs". This dimension is also called collaboration cooperation means that two or more team members work together on task accomplishment.	The Collaboration Survey is an employee engagement tool used to assess employee perceptions on 21 different items that are all relevant to collaboration effectiveness and operations. Example items include: "People working in our collaboration trust and respect each other"; "People ae open to discuss different options"; "There are effective procedures in place to guide team and support collaboration".	Gerber *et al*., 2012: 2; Daniels *et al*., 2011: 584; Breu, Hemingway, Strathern & Bridger, 2002: 27; Kristensen & Kijl, 2010: 65; Lee, Olson & Trimi, 2012: 828 Rousseau, Aubé & Savoie, 2006: 551; Wagner, 1995: 152.

Attribute	Behaviours and practices in support of attribute	Measurements	Literature references
Knowledge building	Utilise people, tools, and other resources. Sharing and codification of tacit knowledge. Learning-by-doing mentality. Collaboration through formation of knowledge sharing communities. Using informal channels for knowledge flow.	There are a number of measures of knowledge processes that are reported in the literature, e.g.: Knowledge creation scale aimed to estimate the frequency of new idea development in the organisation in different areas of its activities. Knowledge storage and documentation aimed to identify the intensity of storage and documentation of both tacit and explicit knowledge. The intra-organisational knowledge sharing scale was developed with the aim to evaluate both vertical and horizontal knowledge sharing within the organisation. The scale for external knowledge acquisition scale aimed to provide information on how frequent knowledge-based interactions of the company are with the external environment.	Gerber *et al*., 2012: 2; Du Plessis, 2007: 23; Andreeva & Kianto, 2011: 1023.
Persistence	Continue to approach problems despite setbacks. A person holds firmly and steadfastly to some purpose or task.	Persistence refers to the amount of time that employees invest in their efforts. Overtime hours has been conceptualised as an indicator of persistence, as it measures the amount of time that employees invest in their work. In psychology, persistence is a personality trait. It is measured in the Temperament and Character Inventory (TCI) and is considered one of the four temperament traits. Persistence refers to perseverance in spite of fatigue or frustration.	Gerber *et al*., 2012: 2; McGiboney & Carter, 1993: 128; Grant, 2008: 51.
Decision making	**Decision making:** Set goals and choose how to proceed. Decision-making style is defined as the response pattern exhibited by an individual in a decision-making situation. This response pattern is determined by the decision-making situation, the decision-making task and by the individual decision maker. Individual differences between decision makers include differences in habits but also differences in basic cognitive abilities such as information processing,	Decision-making style is measured with the General Decision-making Style (GDMS) inventory incorporating a Likert scale ranging from strongly disagree to strongly agree. Goal commitment was assessed by asking individual team members to respond to seven items from the Hollenbeck scale (Locke & Latham, 1990), such as “I think the assigned goal is a good goal to shoot for,” and “Quite frankly, I don’t care if my group achieves its assigned goal or not” (reverse scored).	Gerber *et al*., 2012: 2; Thunholm, 2004, 941, 933; Locke & Latham, 2002: 706; Cervone, Jiwani & Wood, 1991: 257; Durham, Knight & Locke, 1997: 217; Locke & Latham, 2006: 265.

Attribute	Behaviours and practices in support of attribute	Measurements	Literature references
	self-evaluation and self-regulation, which have a consistent impact on the response pattern across different decision-making tasks and situations. There are five decision-making styles in behavioural terms: A rational style characterised by comprehensive search for information, inventory of alternatives and logical evaluation of alternatives; an intuitive style characterised by attention to details in the flow of information rather than systematic search for and processing of information and a tendency to rely on premonitions and feelings; a dependent style characterised by a search for advice and guidance from others before making important decisions; and an avoidant style characterised by attempts to avoid decision making whenever possible; a spontaneous style characterised by a feeling of immediacy and a desire to come through the decision-making process as quickly as possible. The intuitive style was found to correlate positively with ratings of innovativeness. **<u>Goal setting:</u>** Set goals and choose how to proceed. Goals affect performance through four mechanisms: 1. Goals serve a directive function; they direct attention and effort toward goal relevant activities and away from goal irrelevant activities. 2. Goals have an energising function. High goals lead to greater effort than low goals. 3. Goals affect persistence. 4. Goals affect action indirectly by leading to the arousal, discovery, and/or use of task relevant knowledge and strategies. People with high self-efficacy are more likely than those with low self-efficacy to develop effective task strategies to achieve goals.	Participants used a response scale ranging from 0 (do not agree at all) to 10 (absolutely agree).	

Attribute	Behaviours and practices in support of attribute	Measurements	Literature references
Risk taking	Go against what is expected or safe, if necessary. The extent to which there is uncertainty about whether potentially significant and/or disappointing outcomes of decisions will be realised. Willingness to "go out on a limb" with an idea a person perceives as good in an effort to complete their work or reach their goals in an improved manner.	The measure of willingness to take risk (WTR) consists of eight items, each designed to capture two aspects of the WTR construct: the employee is willing to take a risk with their work and the employee acknowledges that to do so subjects them to a potential negative outcome. Sample items include "When I think of a good way to improve the way I accomplish my work, I will risk potential failure to try it out" and "I will take a risk and try something new if I have an idea that might improve my work, regardless of how I might be evaluated".	Gerber *et al*., 2012: 2; Dewett, 2006: 28, 29, 34
Oral and written communication	Craft and share information through written and oral means. Effectively decode other people's verbal and nonverbal messages, and also produce their own messages in an efficient and appropriate way. Able to achieve own personal goals and satisfy individual needs by means of interpersonal communication. Able to integrate in the social environment, and contribute to the fulfilment of other people's goals and needs by manifesting other orientedness in communicative interaction. Devote to the development of relationships and the formation of interactive dyads or groups with other people. Produce messages that attract attention, intellectually stimulate and produce the desired emotional response in those who receive them. Manage social interactions with a more conscious and intentional orientation that best activates their knowledge and skill, and press for the use of tactics or strategies that maximise the chance for the desired outcomes of communicative endeavours.	Bubas (2001: 559) developed an instrument that was named Interpersonal Communication Competence Inventory (ICCI). The ICCI was subsequently evaluated and it was found that the scale had satisfactory internal consistency. Rubin and Martin (1994) developed a self-report Interpersonal Communication Competence Scale (ICCS) that taps ten dimensions of competence: self-disclosure, empathy, social relaxation, assertiveness, interaction management, alter centrism, expressiveness, supportiveness, immediacy, and environmental control	Gerber *et al*., 2012: 2; Bubas, 2001: 559; Rubin & Martin, 1994: 33

Source: Author's own.

The purpose of this section was to disclose the information drawn from work experiences and utilised in the formation of S-E. This led to identification of the judgments and information categories that precede the efficacy assessment (Gist & Mitchel, 1992: 189), strategies for changing S-E and related performance (Gist & Mitchell, 1992: 203), and eventually the identification of personal-based indicators of S-E related to innovation.

3.5 SELF-EFFICACY AS A VARIABLE IN INNOVATION RESEARCH

The treatment of S-E as a variable for the purpose of this study is considered in detail in the methodology section of this dissertation (Chapter 7) and reference is only made here to some examples of how S-E has been treated as a variable in other similar studies.

Van der Bijl and Shortridge-Baggett (2001: 196) indicated that the construct of S-E has three dimensions, which are magnitude (or level), strength and generality (Bandura 1977, cited in Van der Bijl & Shortridge-Baggett, 2001: 196). S-E magnitude measures the difficulty level (e.g. easy, moderate, and hard) an individual feels is required to perform a certain task (Van der Bijl & Shortridge-Baggett, 2001: 196). S-E strength refers to the amount of conviction an individual has about performing successfully at diverse levels of difficulty (Van der Bijl & Shortridge-Baggett, 2001: 196). Generality of S-E refers to the degree to which the expectation is generalised across situations (Van der Bijl & Shortridge-Baggett, 2001: 196). S-E is then measured by obtaining ratings of strength, magnitude and generality.

It appears that the two main arguments in measuring S-E are between a generalised measurement of S-E and a specific measurement of S-E, based on the context, domain and task under investigation.

Although Bandura (1997) was very explicit about the level of specificity at which perceived S-E should be measured, other researchers have developed instruments to assess S-E at a more general personality level than Bandura advocated (Van der Bijl & Shortridge-Baggett, 2001: 197).

These researchers argued that broader and more general dispositional measures are usually better suited for predicting more general patterns of behaviour or outcomes that arise across multiple contexts (Smith, Wallston & Smith, 1995, cited in Van der Bijl & Shortridge-Baggett, 2001: 197).

Bandura (1997: 6), however, cautioned researchers that, to increase accuracy of prediction, "self-efficacy beliefs should be measured in terms of particularized judgments of capability that may vary across realms of activity, different levels of task demands within a given activity domain, and under different situational circumstances". In Bandura's (1997) opinion, S-E beliefs should be assessed at the optimal level of specificity that corresponds to the criterion task being assessed and the domain of functioning being analysed (Van der Bijl & Shortridge-Baggett, 2001: 197).

Two examples of S-E being measured in relation to innovation are given below:

- Onyishi and Ogbodo (2012: 6) used the Self-efficacy Scale (SES), a 30-item inventory which measures the social component of S-E from both interpersonal and intrapersonal perspectives. Sherer *et al*. (1982, cited in Onyishi & Ogbodo, 2012: 6) constructed and validated it. It is a five-point Likert-type structure where 1 represents 'disagree strongly' whilst 5 represents 'agree strongly'. Its purpose is to measure self-perceived competence and effectiveness in work performance as well as efficacy in handling social relationships.
- Kumar and Uzkurt (2010: 8) measured S-E by using Bandura's nine-item S-E scale which is intended to assess the degree to which individuals feel they are capable of performing in a certain manner or attaining certain goals.

Lastly, Pajares (1997: 16) advised that a test of S-E theory requires the type of assessment specified by the theory. When such tests are appropriately conducted, results from S-E investigations have shown that – as Bandura (1986, 1997, cited in Pajares, 1997: 16) theorised – particularised judgments of capability are better predictors of related performances than are more generalised judgments. Consequently, Pajares (1997: 16) recommended that research questions should be formulated with the objective of measuring S-E as specifically as is relevant and useful, and also to enhance the correspondence between S-E and criterial variables.

3.6 SUMMARY

The construct of S-E was reviewed in this section. Firstly an overview of S-E was given. It included a definition of the construct, sources of S-E beliefs, efficacy-activated processes, effects of S-E beliefs, the insight that S-E is context specific, innovation self-efficacy as a specific type of S-E and the major criticisms of S-E. After the review of the construct of S-E, the proposed relationships between S-E and IIB were disclosed. Next, the attributes of S-E in the context of innovation were presented. In conclusion, a short outline was given on how S-E is treated as a variable in research.

Research has shown that individuals gradually accumulate their S-E through prior cognitive, social, and physical accomplishments as well as through learning (Bandura, 1986). S-E thus grows with hard-won achievements as opposed to personality and traits, which are relatively stable characteristics. Therefore, the case is made that there is a positive relationship between S-E and IIB, which implies that by enhancing S-E, IIB will also be positively impacted, and consequently the chances of implementing a potentially useful idea will also increase.

The other main construct that was selected for this study, was perceived organisational support (POS) which is dealt with in the next chapter.

CHAPTER 4
THE ROLE OF PERCEIVED ORGANISATIONAL SUPPORT IN IDEA IMPLEMENTATION

4.1 INTRODUCTION

The purpose of this chapter is to give an overview of POS and examine the underlying relationships between POS and IIB. The attributes related to POS in the context of IIB are also reviewed and lastly a concise overview is given of how POS is treated as a variable in research.

4.2 INTRODUCTION TO PERCEIVED ORGANISATIONAL SUPPORT

It is generally accepted that the implementation of ideas in an organisational environment is reliant on the assistance of others. Axtell *et al*. (2000: 269) specifically pointed out that, while a person can generate new ideas independently, the implementation of ideas typically depends upon the approval, support and resources of others.

Regarding the support that individuals receive in their organisation, Eisenberger, Huntington, Hutchison and Sowa (1986: 500) conducted a study where they presented evidence that employees in an organisation form global beliefs about the extent to which the organisation values their contributions and cares about their well-being, and referred to this phenomenon as “perceived organisational support” (POS). Eisenberger *et al.* (1986: 500) further found that employees' commitment to the organisation is strongly influenced by their perception of the organisation's commitment to them and ultimately Eisenberger *et al*. (1990: 57) also found that POS was positively related to employee innovation.

The positive link between POS and innovation was also confirmed in a number of other studies, as listed in Table 4.1 below.

Table 4.1: Studies linking POS and Innovation

Reference	Description
Scott & Bruce, 1994	The study by Scott and Bruce (1994) where they used data from 172 engineers, scientists, and technicians employed in the Research and Development division of a large organisation to test a path model of innovation behaviour, found that innovative behaviour was predicted by the extent to which the organisational climate was viewed as supportive.
Axtell *et al*., 2000	Axtell *et al*. (2000: 281) found that individuals who experienced greater team leader support and higher levels of participation and support from management, reported that more of their suggestions were put into practice.
Klein & Knight, 2005	Klein and Knight (2005: 245) also found management support to be a critical factor for implementation success: “In the absence of strong, convincing, informed, and demonstrable management support for implementation, employees are likely to conclude that the innovation is a passing managerial fancy”.

Source: Author’s own.

The following sections deal with the influence of POS on idea implementation in the context of IIB through firstly providing a breakdown of the definition of POS, followed by a discussion on how POS influences organisational climate and as a result influences implementation climate as well.

4.3 DEFINITION OF PERCEIVED ORGANISATIONAL SUPPORT

Eisenberger *et al*. (1986) originally started with research on POS with the observation that managers' concern with their employees' commitment to the organisation is positively correlated with employees' focus on the organisation's commitment to them. Eisenberger *et al*. (1986: 500) denoted “commitment” as "…the sense of being bound emotionally or intellectually to some course of action, which may include a person's relationship with another individual, group, or organisation”. Eisenberger *et al.* (1986: 500) alluded to the usefulness of developing a detailed social exchange interpretation of organisational commitment based on the frequent reference to employment as the trade of effort and loyalty for material commodities or social rewards.

The original research of Eisenberger *et al.* (1986) on POS investigated the processes involved in employees' inferences concerning the organisation's commitment to them, and the contribution of such perceived organisational support to employees’ commitment to the organisation. The concepts of Eisenberger *et al.* (1986) regarding employees’ “anthropomorphic ascription of dispositional traits to the organization” was based on the earlier work of Levinson (1965), who suggested that the personification of the organisation is encouraged by the following factors: (a) the organisation has a legal, moral, and financial responsibility for the actions of its agents; (b) organisational precedents, traditions, policies, and norms provide continuity and prescribe role behaviours; and (c) the organisation, through its agents, exerts power over individual employees.

The personification of the organisation was assumed to represent an employee's embodiment of views concerning all other members who control that individual's material and symbolic resources within the organisation (Eisenberger *et al*., 1986: 500).

Eisenberger *et al.* (2005: 501) hypothesised and described the POS construct as: "…employees develop global beliefs concerning the extent to which the organization values their contributions and cares about their well-being" and maintained that such POS would depend on the same attributional processes that people use generally to infer the commitment by others to social relationships.

This original study of Eisenberger *et al*. (1986: 501) referred to several studies which have investigated particular beliefs by employees about their organisation that might contribute to the perception that the organisation values their contributions and cares about their well-being. Eisenberger *et al*. (1986: 501) found that the results of these studies are consistent with their view that POS strengthens employees' effort-outcome expectancy and affective attachment to the organisation, resulting in positive effects on the level of work performance and greater efforts to fulfil the organisation's goals.

Eisenberger *et al*. (1986: 501) claimed that POS would be influenced by various aspects of an employee's treatment by the organisation and would, in turn, influence the employee's interpretation of organisational motives underlying that treatment.

The method of Eisenberger *et al*. (1986: 501) for testing the globality of employees' beliefs concerning support by the organisation was based on the construction of 36 statements representing various possible evaluative judgments from the employees of the organisation and discretionary actions the organisation might take in diverse situations to benefit or harm the employees. Furthermore, evidence that employees form global beliefs concerning the organisation's commitment was indicated by the employees' perception of the organisation's various evaluative judgments of the employee.

The origins of POS were reviewed in this section. The next section presents a review of the studies which link POS with innovative behaviour specifically.

4.4 RELATIONSHIP BETWEEN PERCEIVED ORGANISATIONAL SUPPORT AND INNOVATIVE BEHAVIOUR

West (2002: 373) defined support for innovation as: "…the expectation, approval, and practical support of attempts to introduce new and improved ways of doing things in the work environment".

After Eisenbergers *et al*.'s (1986) original study on POS, Eisenberger *et al*. (1990: 52) conducted further research on POS which hypothesised that innovation and spontaneous problem solving may additionally be associated with perceived support.

Notably, the measurement of "innovation" by Eisenberger *et al.* (1990) was based only on the suggestion of an improvement for the organisation, it did not measure if the idea was actually implemented to any extent.

This link between POS and innovation was based on Eisenberger *et al*.'s (1990: 52) observation that the employee's strong involvement in the organisation includes performance that goes beyond the call of duty, including actions for which the individual receives no immediate reward and which benefits the larger organisation. Eisenberger *et al.* (1990: 54) argued that because POS should strengthen affective attachments to the organisation, employees with high perceived support would be predicted to express stronger feelings of affiliation and loyalty.

The study of Eisenberger *et al*. (1990: 52) was done through a questionnaire administered to hourly employed employees and managers in manufacturing, and established that POS was positively related to innovation (for hourly employees and managers) as measured by the constructiveness of anonymous employee suggestions to aid the organisation. Furthermore, employees with high POS expressed greater affective attachment to the organisation and greater performance-reward expectancies.

POS was found to be positively related to Eisenberger *et al*.'s (1990: 57) "innovation" in absence of anticipated direct reward or personal recognition – because the improvement suggestions were given anonymously – and Eisenberger *et al*. (1990: 57) ascribed this phenomenon to organisational citizenship behaviour.

In an extensive review on the empirical literature on organisational citizenship behaviour (OCB), Podsakoff, MacKenzie, Paine and Bachrach (2000: 524) referred to individual initiative as a form of citizenship behaviour and mentioned that such behaviours include "voluntary acts of creativity and innovation designed to improve one's task or the organization's performance". Podsakoff *et al*. (2000: 524) concluded that most researchers of OCB have not included this dimension of individual initiative in their studies of OCB, since this form of behaviour is among the most difficult to distinguish from in-role behaviour, because it "differs more in degree than in kind".

Pundt *et al*. (2010: 173) specifically investigated if employees' innovative behaviour can be explained in terms of social exchange between employees and organisations. The research model of Pundt *et al*. (2010: 176) is based on what they call the "Organizational Support Theory" (OST) of Eisenberger *et al.* (1986). In essence, Pundt *et al.* (2010: 176) based the working of OST on the universal norm of reciprocity, implying that people help other people who have helped them in the

past. According to Pundt *et al*. (2010: 176), OST makes the following assumption: "The more employees perceive organizational support, the more they develop a global feeling of obligation towards the organization. Employees thus feel obligated to reciprocate by supporting the organization in accomplishing its goals".

The theories and concepts of Eisenberger *et al*. (1986; 1990) put forward a positive link between POS and innovative behaviour, but concerning the state of empirical research on innovative behaviour and POS, a number of researchers observed that studies providing empirical evidence of the positive relationship between innovative behaviour and POS are rather sparse (Lloréns Montes *et al.*, 2004: 169; Pundt *et al*., 2010: 178; Alpkan, Bulut, Gunday, Ulusoy & Kilic, 2010: 733).

Notable studies which empirically investigated the link between innovative behaviour and POS specifically are listed in Table 4.2 below.

Table 4.2: Studies which empirically investigated the link between innovative behaviour and POS

Reference	Description
West & Anderson, 1996	West and Anderson (1996) conducted a longitudinal study of 27 hospital top management teams, and support for innovation emerged as a powerful predictor of team innovation (measured by independent evaluations of implemented innovations).
Dougherty & Hard, 1996	Dougherty and Hardy (1996), in a study of 40 product introductions, found that management support was often a crucial factor influencing the success of a product.
Antoncic & Zorn, 2004	Antoncic and Zorn (2004) conducted a study which found causal links between organisational support and types of product and technological innovations.
Hornsby *et al.*, 2009	Hornsby *et al.* (2009) conducted a study which found correlation between top management support and the number of innovative ideas implemented.

Source: Author's own.

The theories of Eisenberger *et al*. (1986; 1990) and the studies mentioned above, which empirically tested the relationship between POS and innovation, confirm that a positive link between innovation and POS is plausible.

In addition, Alpkan *et al*. (2010: 734) scrutinised the literature related to how POS creates a suitable internal environment for innovation, and found five theoretical factors related to organisational support. Table 4.3 below lists the five factors, their definitions and top citations:

Table 4.3: The five theoretical factors of organisational support of Alpkan *et al*.

Factors	Definitions	Citations
Management support for idea generation	Encouragement of entrepreneurial idea generation and development.	Pinchot, 1985; Damanpour, 1991; Stevenson and Jarillo, 1990; Hornsby, Naffziger, Kuratko and Montagno, 1993; Kanter, 1988; Sundbo, 1999.
Allocation of free time	Provision of sufficient time to work on developing novelties without any burden of routine workload.	Burgelman, 1984; Kanter, 1985; Sathe, 1985; Fry, 1987; Damanpour, 1991; Slevin and Covin, 1990; Bamber *et al.,* 2002.
Work discretion	Decision-making initiative of the staff about their work.	Sathe, 1985; Quinn, 1985; Antoncic and Hisrich, 2001; Drucker, 1985; Burgelman, 1983; Zahra, 1991.
Performance-based reward system	Availability of a performance-based reward system encouraging innovativeness.	Souder, 1981; Fry, 1987; Cissell, 1987; Sykes and Block, 1989; Kuratko *et al*., 2005.
Tolerance for risk taking	Recognising risk-taking intrapreneurs, even if they fail, and encouraging them to implement their novel proposals and projects.	Stopford and Baden-Fuller, 1994; Quinn, 1985; Kanter, 1988; Lumpkin and Dess, 1996, 2001.

Source: Alpkan *et al*., 2010: 735.

One of the key themes for organisations that strive to become more innovative and get useful ideas implemented, as discussed in Chapter 2 above, was the importance of the organisational climate for innovation – and more specifically for this study – the organisational climate for implementation. The studies which referenced an innovation- and implementation climate, all included the concept of management- and/or organisational support (Klein & Sorra, 1996: 1060; Klein *et al*., 2001: 812; Taylor & McAdam, 2004: 34; Sawang & Unsworth, 2011: 989). Therefore, to more fully comprehend the link between POS and idea implementation, the role of POS in the context of the organisational climate for innovation, and then more specifically the role of POS in the organisational climate for implementation of useful ideas, are investigated in more detail in the next section.

4.5 IMPLEMENTATION CLIMATE AND PERCEIVED ORGANISATIONAL SUPPORT

The relationship between POS and innovative behaviour was reviewed in the previous section. The purpose of this section is to discuss the relationship between POS and the construct of climate for innovation, and subsequently the relationship between POS and climate for implementation of ideas.

4.5.1 Relationship between perceived organisational support and the organisational climate for innovation

In terms of how support manifests in the innovation climate, Ruiz-Moreno, Garcia-Morales and Llorens-Montes (2008) did a comprehensive review on the link between perceptions of support for innovation and organisational climate. Ruiz-Moreno *et al*. (2008: 511) established that the dimensions of the organisational climate influence perceptions of a climate of support for innovation. Ruiz-Moreno *et al*. (2009: 511) referred to Schneider *et al.* (1994, cited in Ruiz-Moreno *et al*., 2008: 511) who defined four dimensions that determine the formation of organisational climate, namely:

- the nature of interpersonal relations;
- the nature of hierarchy;
- the nature of work; and
- management support and rewards.

These dimensions in turn influence the perception of a climate of support for innovation (Ruiz-Moreno *et al.*, 2008: 511).

Oher empirical studies have also analysed how organisational climate can encourage perceptions of support for innovation, as provided in Table 4.4 below.

Table 4.4: Studies which empirically investigated the link between organisational climate and support for innovation

Reference	Description
Hurley & Hult, 1998	A study by Hurley and Hult (1998) analysed the relations between the different dimensions of organisational climate (namely: learning and development, participation in decision making, management support, collaboration, power, communication and tolerance for conflict and risk) and the organisation's orientation to innovation. The results of Hurley and Hult (1998: 51) indicate that the most important antecedents of organisational climate for perceptions of support for innovation are participation in decision making and learning and development.
Chandler, Keller & Lyon, 2000	Chandler, Keller and Lyon (2000: 73) empirically confirmed that management support is crucial for establishing a climate of support for innovation since the uncertainty and complexity inherent in innovation require that employees trust managers and undertake risks without fear in order to generate perceptions of support for innovation. Chandler *et al*. (2000: 73) also established that a system of compensation and recognition is a dimension of organisational climate which supports innovation.
Scott & Bruce, 1994	Scott and Bruce (1994: 583) empirically verified the degree to which organisation members perceive the organisational climate as supportive of innovation.

Source: Author's own.

Based on the examples provided above, it could thus be concluded that there is a positive relationship between POS and the organisational climate for innovation.

4.5.2 Relationship between perceived organisational support and the implementation climate of the organisation

The importance of implementation climate concerning the implementation stage of innovation has featured extensively in the implementation literature (Damanpour, 1991; Klein & Sorra, 1996; Dong *et al*., 2008; Leiva *et al*., 2011; Taylor & McAdam, 2004; Klein *et al*., 2001; Sawang & Unsworth, 2011).

Damanpour (1991: 558) – a major influence on the research on innovation – conducted a meta-analysis of the relationships between organisational innovation and its potential determinants in 1991, and already then concluded that: "Managers' favorable attitude toward change leads to an internal climate conducive to innovation. Managerial support for innovation is especially required in the implementation stage, when coordination and conflict resolution among individuals and units are essential".

Klein and Sorra (1996: 1074) – another major influence on innovation-related research, specifically in the implementation space – in the 1996 study (Klein & Sorra, 1996) which set the stage for the

construct of implementation effectiveness, concluded that the organisational change and innovation literature suggests that the primary antecedent of an organisation's climate for implementation is managers' support for implementation of the innovation.

Sawang and Unsworth (2011: 393) argue that it is possible for multiple climates to exist concurrently within an organisation, and “implementation climate” is one of these possible climates. Scott and Bruce (1994: 582) also mentioned that there are many types of climates, and quoted Schneider and Reichers (cited in Scott and Bruce, 1994: 582) who wrote that "to speak of organizational climate per se, without attaching a referent, is meaningless". Scott and Bruce (1994: 582) then concluded that not all of the dimensions contained within omnibus climate measures are relevant to the criteria of interest in a specific research study.

A number of perspectives have been given on the meaning of “implementation climate” in this study. Sawang and Unsworth (2011: 993) defined it as: “perceptions of the extent to which organizational members support implementation activities”. Klein and Sorra (1996: 1060) defined implementation climate as: “….targeted employees' shared summary perceptions of the extent to which their use of a specific innovation is rewarded, supported, and expected within their organization” and it is the result of “…employees' shared experiences and observations of, and their information and discussions about, their organization's implementation policies and practices”. It is therefore evident that “support” is a key construct in these descriptions of implementation climate.

In an article specifically focusing on the meaning and measurement of implementation climate, Weiner *et al*. (2011: 1) highlighted that implementation climate differs from organisational climate in the sense that it has a strategic focus, and it is innovation specific. Weiner *et al*. (2011: 1) warned that measuring implementation climate is challenging because the construct operates at the organisational level, but requires the collection of multi-dimensional perceptual data from many expected innovation users within an organisation; and advised further that researchers might find it useful to distinguish implementation climate level (the average of implementation climate perceptions) from implementation climate strength (the variability of implementation climate perceptions).

From the above arguments it could thus be concluded that the element of support features prominently in the definition and measurement of an organisation’s implementation climate. Furthermore, it could be concluded that the concept of implementation climate is particularly related to innovation and that it is challenging to measure the concept of implementation climate.

4.6 THE ATTRIBUTES RELATED TO PERCEIVED ORGANISATIONAL SUPPORT IN THE CONTEXT OF IIB

Based on the studies and findings discussed above, it is argued that POS as a construct in implementation climate manifests in the following ways, as listed in Table 4.5 below.

Table 4.5: Ways in which POS manifests in the implementation climate

Manifestation of POS	Reference
Generation and development of new ideas are expected and supported.	Alpkan *et al*., 2010: 734
Implementation activities are expected.	Klein & Sorra, 1996: 1060
Implementation activities are supported.	Klein & Sorra, 1996: 1060; Sawang & Unsworth, 2011: 993.
Implementation activities are recognised, rewarded and incentivised.	Klein & Sorra, 1996: 1060; Chandler *et al.*, 2000: 73.
Resources are provided for implementation activities.	Klein & Sorra, 1996: 1074; Sawang & Unsworth, 2011: 989.
Decision-making autonomy is granted to people who pursue implementation activities.	Alpkan *et al*., 2010: 733.
Time is allocated to pursue implementation activities.	Alpkan *et al*., 2010: 734, 743, 736.
Tolerance exists for risk taking, trial-and-error or failure of implementation initiatives.	Alpkan *et al*., 2010: 734, 743.
Participation in decision making takes place.	Hurley & Hult, 1998: 51.
Learning and development are encouraged within the organisation.	Hurley & Hult, 1998: 51.
Coordination and conflict resolution happen among individuals undertaking implementation activities.	Damanpour, 1991: 558.
The establishment of implementation policies and -practices which are perceived as positive.	Klein & Sorra, 1996: 1060.

Source: Author's own.

To more fully comprehend the attributes related to POS, Table 4.6 below lists the behaviours and practices (revealed in the literature) in support of these attributes, including how they have been measured.

Table 4.6: Behaviours and practices in support of the attributes of perceived organisational support

Attribute	Behaviours and practices in support of attribute	Measurements	Literature references
Generation and development of new ideas are expected and supported.	The development of new and innovative ideas are encouraged. Senior managers encourage innovators to bend rules and rigid procedures in order to keep promising ideas on track. Developing one's own ideas is encouraged for the improvement of the corporation. Upper management is aware and very receptive to ideas and suggestions.	Support for innovation (8 items) refers to an expectation and practical support of attempts to introduce new ideas. An example of support for innovation is: "Team members provide practical support for new ideas and their application". Items for both measures have five-point response scales running from 'strongly agree' to 'strongly disagree'.	Alpkan *et al*., 2010: 734, 742; Axtell *et al*., 2000: 272.
Implementation activities are expected.	Employees are expected and encouraged to try new and different ways of doing things. Expectation of implementation activities include: (a) ensuring employee skill in innovation use; (b) providing incentives for innovation use and disincentives for innovation avoidance; and (c) removing obstacles to innovation use.	Instrument developed by Farmer, Tierney & Kung- McIntyre (2003) that measures participants' self-expectations and the perceived expectations of co-workers for them to display creative behaviours. Participants reported others' expectations using four items for each reference group. Responses were made on a five-point Likert-type scale ranging from 1="not at all" to 5="to a large extent". A sample item is: "My supervisor expects me to be creative" (i.e., perceived leader expectations).	Klein & Sorra, 1996: 1060; Scott & Bruce, 1994: 590; Carmeli & Schaubroeck, 2007: 40.
Implementation activities are supported.	Managers/Supervisors/Leaders encourage employees to participate in implementation activities.	Perceptions of an innovation-supportive culture were measured using a ten-item Likert-type scale. The response format stated: If I participated in the following activity, I would be (1) disapproved, (2) mildly disapproved, (3) neither approved nor disapproved, (4) mildly approved, and (5) approved. Core items for the scale include: (1) Improved product quality, (2) Developed a new product idea, (3) Came up with new ways to save money, (4) Improved team efficiency, and (5) Tried new ways of doing things.	Klein & Sorra, 1996: 1074; Sawang & Unsworth, 2011: 993; Klein & Knight, 2005: 245; Chandler *et al*., 2000: 65; Ruiz-Morena *et al*., 2005: 515; Scott & Bruce, 1994: 591.

Attribute	Behaviours and practices in support of attribute	Measurements	Literature references
Implementation activities are recognised, rewarded and incentivised.	Availability of a performance-based reward system encouraging innovativeness. People will receive some form of recognition, reward or incentive when they take action to try new and different things with the expectation of benefit to the organisation. The organisation has a reward orientation. "Reward orientation" is "the extent that rewards and evaluations are allocated on the basis of creativity and innovative results" (Tesluk, Farr & Klein, 1997: 34).	Using a scale ranging from ''strongly disagree'' (1) to ''strongly agree'' (7), employees responded to the following three items developed for this study: ''We have programs in this organisation that reward individual creativity''; ''This organisation rewards people financially for developing unique ideas or products''; and ''Individuals in my work unit receive special recognition for unique contributions".	Klein & Sorra, 1996: 1060; Alpkan *et al*., 2010: 734; Chandler *et al*., 2000: 73; Baer, Oldham & Cummings, 2003: 576; Tesluk *et al*., 1997: 34
Resources are provided for implementation activities.	The organisation allocates people, time, funding, equipment, materials, and services necessary to implement new ideas, projects and solutions.	To evaluate the extent to which the organisation provided resources for innovation, four items were rated: (a) allocating sufficient budget for innovation-related projects, (b) providing additional resources for the innovation management team, (c) identifying and supporting innovation champions, and (d) promoting a collaborative social network for innovation that includes external experts.	Klein & Sorra, 1996: 1074; Klein & Knight, 2005: 245; Sawang & Unsworth, 2011: 989; Axtell *et al*., 2000: 269; Baer, 2012: 1103; Daniels *et al*., 2011: 584; Tesluk *et al*., 1997: 34 Choi & Chang, 2009: 249.
Decision-making autonomy is granted to people who pursue implementation activities.	Employees have the freedom to break away from the organisational norms and do things their own way. Employees have the freedom to implement different work methods for doing major and routine tasks from day to day. It is basically the employees' own responsibility to decide how their jobs get done. The organisation provides the employees with the freedom to use their own judgment and methods.	Autonomy is an established concept within the management literature and has been described using a variety of frameworks (Lumpkin, Cogliser & Schneider, 2009: 50). Lumpkin *et al*. (2009: 50) listed a number of the measurement scales used for autonomy.	Axtell *et al*., 2000: 281; Hammond *et al*., 2011: 101; Cadwallader *et al*., 2010: 231; Alpkan *et al*., 2010: 734; Lumpkin, Cogliser & Schneider, 2009: 50; Liu, Chen & Yao, 2011: 299.

Attribute	Behaviours and practices in support of attribute	Measurements	Literature references
Time is allocated to pursue implementation activities.	The organisation provides sufficient time to work on developing novelties without any burden of routine workload. A worker with a good idea is often given free time to develop that idea. Employees' workloads do not prevent them from conducting innovative projects.	Statements used in measuring time allocation for innovation: 1. During the past three months, my work load was too heavy to spend time on developing new ideas. 2. I always seem to have plenty of time to get everything done. 3. I have just the right amount of time and work load to do everything well. 4. My job is structured so that I have very little time to think about wider organisational problems. 5. I feel that I am always working with time constraints on my job. 6. My co- workers and I always find time for long-term problem solving.	Alpkan *et al.,* 2010: 734, 743; 736; Hornsby, Kuratko & Zahra, 2002: 265.
Tolerance exists for risk taking, trial-and-error or failure of implementation initiatives.	The organisation recognises risk-taking employees, even if they fail, and encourages them to implement their novel proposals and projects. Tolerance for failure is the ability or willingness to endure a negative project outcome without penalising the individual(s) involved.	Example statements used in measuring tolerance for risk taking: 1. There are several options within the organisation for individuals to get financial support to actualise their innovative projects. 2. The term risk taker is considered a positive attribute for people in our organisation. 3. Individual risk takers are often recognised for their willingness to champion new projects, whether eventually successful or not.	Alpkan *et al*., 2010: 734, 743; Chandler *et al*., 2000: 73; Hutchison-Krupat & Chao, 2014: 1269
Participation in decision making takes place.	Participative leadership style involves efforts by a leader to encourage and facilitate participation by their subordinates in making decisions and solving problems that would otherwise be handled by the leader alone. Decision making is delegated to the lowest possible level of authority. Individuals involved in implementing decisions have a say in making the decisions.	Yan (2011: 400) used four items adapted from the Michigan Organizational Assessment Questionnaire (Cammann *et al*., 1983) to measure the participative leadership style. Respondents were asked to indicate how frequently leadership in the business engages in the four participative leadership behaviours. One example is "encourage subordinates to speak up when they disagree with a decision".	West, 2002: 371 Yan, 2011: 396, 400

Attribute	Behaviours and practices in support of attribute	Measurements	Literature references
	Decisions are made on the basis of research, data, and technical criteria, as opposed to political concerns. Decisions are based on open discussion and debate of facts. Once a decision is made, management communicates the results and rationale to employees.	All the items were rated on a five-point Likert scale anchored by 1 “almost never” and 7 “almost always”.	
Learning and development are encouraged within the organisation.	Leaders create a shared team learning orientation by (a) articulating a compelling and inspiring reason for innovation use; (b) expressing their own fallibility and need for team members’ assistance and input; and (c) communicating to team members that they are essential, valued, and knowledgeable partners in the change process. As a result, team members see innovation implementation as an exciting learning opportunity, not as a burden to be endured.	Example statements used in measuring the encouragement of learning and development: 1. The organisation provides opportunities for individual development other than formal training (e.g. work assignments and job rotation). 2. The organisation encourages managers to attend formal developmental activities such as training, professional seminars, symposia, etc. 3. Managers basically agree that our organisation’s ability to learn is the key to our competitive advantage. 4. The basic values of this organisation include learning as key to improvement. 5. The sense around here is that employee learning is an investment, not an expense. 6. Learning in my organisation is seen as a key commodity necessary to guarantee organisational survival.	Hurley & Hult, 1998: 51,46; Klein & Knight, 2005: 245; Calantone, Cavusgil & Zhao, 2002: 520.
Coordination and conflict resolution happen among individuals undertaking implementation activities.	Task conflict occurs when there are disagreements among the members of a group or organisation about the content of the tasks being performed, including differences in viewpoints, ideas and opinions. Conflict resolution behaviour entails an open sharing of concerns and issues, trying to satisfy the expectations of others and looking for the middle ground to resolve disagreements.	Examples of items from scales that were used by Song, Dyer and Thieme (2006: 344) to assess the behavioural conflict handling strategies include: "We openly share concerns and issues" (integrating); "We try to satisfy the expectations of others" (accommodating); "We look for the middle ground to resolve disagreements" (compromising); "We tenaciously argue the merit of initial positions	Damanpour, 1991: 558; West, 2002: 371; Martins & Terblanche, 2003: 72; Yan, 2011: 395, 400; Song *et al*., 2006: 344.

Attribute	Behaviours and practices in support of attribute	Measurements	Literature references
	Practices which indicate an interest in improved conflict resolution skills include an effort to understand different individual thinking styles and training personnel in the process of constructive confrontation.	when disagreements occur" (forcing); and "We avoid openly discussing disputed issues" (avoiding).	
The establishment of implementation policies and -practices which are perceived as positive.	The value of innovation in the organisation is communicated through socialisation processes, structures, policies, and day-to-day artefacts and practices and procedures. Employees who clearly understand their roles, or functions, with respect to organisational policies, should exhibit higher levels of commitment toward those policies.	Foote, Seipel, Johnson & Duffy (2005: 209) developed an instrument to measure Policy Commitment. Respondents were asked to indicate their agreement on a seven-point Likert-type scale ranging from strongly disagree (1) to strongly agree (7).	Klein & Sorra, 1996: 1060; Klein & Knight, 2005: 245; Dobni, 2008: 544; Foote *et al.* (2005: 207-209).

Source: Author's own.

The purpose of this section was to disclose how the attributes related to POS manifest in the implementation climate of an organisation, and furthermore to list the behaviours and practices in support of these attributes, including how they have been measured.

4.7 PERCEIVED ORGANISATIONAL SUPPORT AS A VARIABLE IN INNOVATION RESEARCH

The treatment of POS as a variable for the purpose of this study is discussed in detail in the methodology section of this dissertation (Chapter 7) and reference is only made here to some examples of how POS has been treated as a variable in similar studies.

The Survey of Perceived Organizational Support (SPOS) was originally constructed by Eisenberger *et al.* (1986: 501). It is made up of 36 statements representing various possible evaluative judgments by the employee of the organisation and discretionary actions the organisation might take in diverse situations to benefit or harm the employee. Evidence that employees form global beliefs concerning commitment by the organisation would be indicated by employees' perceptions that the organisation's various evaluative judgments of them are consistently favourable or unfavourable to a high or low degree, and the expectancy that the organisation would treat the employee beneficially or harmfully in a variety of situations.

The examples found in the literature which measured POS in the context of innovation, all used an adapted version of SPOS of Eisenberger *et al.* (1986). These examples include the studies of Pundt *et al*. (2010: 182); Onyishi and Ogbodo (2012: 6) and Eisenberger *et al*. (1990: 52).

4.8 SUMMARY

This section started off with an analysis of the definition of POS, followed by a discussion on how Eisenberger *et al*. (1986) originally conceptualised the POS construct. The relationships between POS and innovation were then examined, including a review of the OCB theory (Podsakoff *et al*., 2000) and social exchange theory (Pundt *et al*., 2010) that were applied to explain the link between innovation and POS.

The relationships between POS and innovation were then investigated in more detail by firstly examining how POS influences the organisational climate for innovation, and consequently by considering how POS influences the implementation climate.

The review of POS concluded with a list of the ways in which POS could manifest in an organisation's implementation climate, and how the construct of POS has been measured in previous research.

The next chapter presents the methodology that was used to investigate the constructs and variables included in this study.

CHAPTER 5
RESEARCH METHOD

5.1 INTRODUCTION

The research strategy or approach to inquiry (Creswell, 2008: 11) and the research design that were applied to meet the objectives of this study are explained in this chapter.

Before disclosing the details of the research strategy, a concise review is presented below of the previous chapters, followed by a breakdown of the structure of this chapter.

5.1.1 Overview of previous chapters

The primary objective of this study was to investigate idea implementation by employees in an organisation through the main constructs of S-E and POS. A recap of the previous chapters which led to the identification of the main constructs of this study is provided next.

The importance and value of innovation to organisations were argued in brief, followed by an analysis of the definition of innovation and a presentation of the main theories which have been used to analyse and explain innovation.

The examination of the theories related to innovation, followed by a review of how innovation has previously been studied, led to the conclusion that innovation should be investigated on both the individual and organisational levels, taking the individual as the source of innovation (individual level), while also recognising that innovation happens in a social system in the context of the organisation (organisational level).

Since this study focused on the implementation of useful ideas in an organisation, the constructs of idea generation, idea implementation and consequently innovation were then reviewed in the context of the individual as the source of the idea, while recognising that implementation takes place in the organisational setting. This led to the argument that the implementation of ideas is actually made up of multifaceted behaviour, defined as individual innovative behaviour – IIB (Scott & Bruce, 1994: 581; Kleysen & Street, 2001: 284; De Jong & Den Hartog, 2010: 23; Yuan & Woodman, 2010: 324).

Subsequent to defining the construct of IIB, the theory on idea implementation and the relevant factors which influence IIB were examined. Lastly, the relevant theories, models and research studies that apply to IIB were investigated, leading to the substantiation of the choice of the two main constructs for this study, namely self-efficacy (S-E) and perceived organisational support (POS).

The constructs of S-E and POS were then examined respectively in more detail in Chapter 3 and Chapter 4. Firstly, an overview and definition of the respective constructs were given, followed by a discussion of the underlying relationship between the construct and IIB, which then set the foundation for identifying the attributes and behaviours associated with these constructs in the context of IIB. In conclusion, a concise summary was provided on how these constructs have been treated and measured as variables in other similar studies.

5.1.2 Chapter structure

Firstly, the worldview for this study is explained, and then – based on the nature of the problem and how innovation has been researched – a justification is offered for the chosen approach to inquiry utilised to investigate the research problem of this study.

A mixed method research approach consisting of two phases was applied for this study. This chapter provides an explanation of the research approach, followed by detailed explanations of the research design for each of the two phases in the next two chapters.

5.2 APPROACH TO INQUIRY

5.2.1 Worldview

The purpose of this section is to disclose the larger philosophical ideas adopted for this study in order to divulge the choice of research approach (Creswell, 2008: 6). The research approach was based on the chosen philosophical worldview. A definition of the worldview is given as well as basic considerations of the worldview, including how the worldview shaped the investigator's approach to research.

The meaning of worldview is taken as "a basic set of beliefs that guide action" (Creswell, 2008: 6). To elaborate, a worldview is a general orientation about the world and the nature of research that a researcher holds (Creswell, 2008: 6). Four different worldviews exist, namely post-positivism, constructivism, advocacy/participatory and pragmatism (Creswell, 2008: 6).

This study primarily investigated how the constructs of S-E and POS influence the implementation of potentially useful ideas by employees in an organisation. Furthermore, it has been argued that innovation involves complex interaction in the organisational context. Therefore, the worldview on which this study was based reflects the principles of pragmatism, since pragmatism as a worldview arises out of actions, situations, and consequences and there is a concern with applications – what works – and solutions to problems (Creswell, 2008: 10).

Pragmatism is not committed to any one system of philosophy and reality. This applies to mixed method research in that inquirers draw liberally from both qualitative and quantitative assumptions when they engage in their research (Creswell, 2008: 10; Saunders *et al.*, 2007: 110).

This study is consequently aligned to the pragmatism worldview, since it followed an initial inductive qualitative phase aimed at generating new hypotheses from observed data (i.e. from more specific observations to more general theories), followed by a deductive quantitative phase aimed at testing the formulated hypotheses (i.e. working from the more general to the more specific).

5.2.2 Business research

The main aim of research is to find out the truth which is hidden and which has not been discovered as yet and therefore the purpose of research was to discover answers to questions through the application of scientific procedures (Kothari, 2004: 2).

The scope of this study is organisational innovation, more specifically, innovation in a business context. Zikmund (2003: 7) defined business research as the systematic and objective process of gathering, recording and analysing data to aid making business decisions. Moreover, decision making is formally defined as the process of resolving a problem or choosing among alternative opportunities (Zikmund, 2003: 53).

The problem (opportunity) to be resolved by this study was how individuals could improve the chances of successfully implementing their potentially useful ideas in the actual organisational setting with its everyday realities and challenges (Nayak, 2008: 423; Hirst *et al*., 2009: 281).

5.2.3 The nature of the problem / opportunity

The nature of a research problem plays an important role in the choice of research approach (Zikmund, 2003: 93; Creswell, 2008: 18).

Creswell (2008: 18) asserted that if a problem calls for (a) identification of factors that influence an outcome, (b) utility of an intervention, or (c) understanding the best predictors of outcomes, then a quantitative approach is best. On the other hand, if a concept or phenomenon needs to be understood because little research has been done on it, then it merits a qualitative approach. Alternatively, Zikmund (2003: 93) reasoned that a decision maker's degree of uncertainty influences the decisions about the type of research that will be conducted. On the one hand, well-tested research techniques are used to investigate routine problems that have already been defined. On the other hand, a researcher may face a decision-making situation that is absolutely ambiguous and the nature of the problem to be solved is unclear, the objectives are unclear and alternatives are difficult to define (Zikmund, 2003: 93).

Zikmund (2003: 93) advised that the formal quantitative research process should not begin until the problem has been clearly defined. Consequently, Zikmund (2003: 94) listed six interrelated steps

for defining a research problem, which are addressed below to demonstrate the thought process that was used to arrive at the chosen approach of inquiry:

i) Ascertain the decision maker's objective.

The objective of this study was to investigate idea implementation by employees in organisations through the main constructs of S-E and POS and associated variables, for the purpose of advancing innovation in organisations.

ii) Understand the background of the problem.

The construct of IIB was revealed in the literature representing the behaviours of generating ideas and taking action to implement the ideas (Scott & Bruce, 1994: 581; Kleysen & Street, 2001: 284; De Jong & Den Hartog, 2010: 23; Yuan & Woodman, 2010: 324). The literature also revealed that there is a positive relationship between S-E and IIB (Tabak & Barr, 1996: 389; Kumar & Uzkurt, 2010: 2; Bandura, 1989: 731; Parker & Collins, 2010: 642; Axtell *et al*., 2000; Tierney & Farmer, 2002; Stajkovic & Luthans, 1998; Kumar & Uzkurt, 2010, Onyishi & Ogbodo, 2012, Hammond *et al*., 2011), and that POS also has a positive influence on IIB (Eisenberger *et al*., 1990: 54; Pundt *et al*., 2010: 176; Alpkan *et al*., 2010: 734; Klein & Sorra, 1996: 1060; Klein *et al*., 2001: 812; Taylor & McAdam, 2004: 34; Sawang & Unsworth, 2011: 989).

However, only a few studies could be found where S-E had been studied with regards to IIB in the context of organisational innovation (Tierney & Farmer, 2002; Kumar & Uzkurt, 2010; Ahlin *et al*., 2014); and the studies providing empirical evidence of the positive relationship between innovative behaviour and POS are also rather sparse (Lloréns Montes *et al.*, 2004: 169; Pundt *et al*., 2010: 178; Alpkan *et al*., 2010: 733).

iii) Isolate and identify the problem, rather than its symptoms.

Anticipating all the dimensions of a problem is impossible for any researcher and the researcher's job is to isolate and identify the most likely causes (Zikmund, 2003: 96). Furthermore, Zikmund (2003: 96) warned that certain occurrences that appear to be "the problem" may be only symptoms of a deeper problem and other problems may only be identified after gathering background information and after conducting some exploratory research.

For this study, it was a case of finding key influencers rather than causes, i.e. in this case, S-E and POS were taken as key influencers of IIB.

iv) Determine the unit of analysis.

It was pointed out in Section 1.1.5 that the approach taken for this study was that the individual is the source of innovation, whilst recognising that the individual will inevitably have to innovate within the context of the organisation. Hence, the individual was taken as the unit of analysis for this study.

v) Determine the relevant variables.

A "variable" is defined as anything that varies or changes in value (Zikmund, 2003: 96). Because a variable represents a quality that can exhibit differences in value, usually magnitude or strength, it may be said that a variable generally is anything that may assume different numerical or categorical values.

Key variables should be defined in the problem definition stage (Zikmund, 2003: 97). For the main constructs, S-E and POS were identified as key constructs related to idea implementation in an organisation, and in the first phase of this study, the aim was to explore the behaviours and variables related to these constructs.

vi) State the research question.

The inclusion of research questions in the statement of a business problem makes it easier to understand what is perplexing managers and indicates the issues to be resolved. A research question is the researcher's translation of the business problem into a specific need for inquiry (Zikmund, 2003: 98). The research question for this study was defined as a problem statement which is deliberated in Section 1.2.

Further, concerning the nature of the problem, it was established in the literature that innovation and innovative behaviour in organisations are complex phenomena (Tabak & Barr, 1996: 389; Ford, 1996: 1117; Woodman *et al*., 1993: 293; Taylor & McAdam, 2004: 33; Anderson *et al*., 2014: 1300), involving non-routine behaviours (Sproull & Hofmeister, 1986: 44; Ford, 1996; 1116) and elements of risk (Yuan & Woodman, 2010: 323; Alexander & Van Knippenberg, 2014: 425; Fidler & Johnson, 1984: 705).

Anderson *et al*. (2004: 161) described innovation as a complex phenomenon possessing features which cross the levels of analysis between individuals, work groups, and organisations, and innovation involves complex interaction between the individual and the work situation at different levels of the organisation.

Crossan and Apaydin (2010: 1166) described the "challenging" nature of innovation as follows: "Innovation is a broad term with multiple meanings; it draws on theories from a variety of disciplines and has been studied using a wide range of research methodologies. The synthesis is

further complicated by multiple levels of analysis and dimensions, and inconsistent operationalization of the primary constructs, which in turn led to mixed empirical results".

Hence, based on the nature of innovation and innovative behaviour, and the breakdown of the steps for defining a research problem, the decision was made to conduct exploratory research first in order to investigate the main constructs in detail. The purpose of investigating the main constructs was to identify variables and formulate hypotheses based on the expected relationships between the main constructs, the associated variables, and idea implementation.

5.2.4 Research methods applied to study innovation

It was evident from the review of literature that innovation has been researched through numerous types of approaches. To uncover which methods were primarily applied for studying innovation, the most expedient frameworks and structures for organising research on innovation found in the literature were examined.

Anderson *et al.* (2004: 153) investigated which research methods are in popular usage amongst innovation researchers and how study designs have typically operationalised the concept of workplace innovation for investigation. Accordingly, Anderson *et al.* (2004: 154) carried out a detailed content analysis of all innovation papers published over a period of five years (1997–2002) in the top rated scientific journals in management sciences. Studies were coded against ten main dimensions:

- source of the research question(s);
- setting;
- methodology;
- data collection method(s);
- level of analysis;
- innovation measurement;
- interaction effects;
- negative predictors;
- innovation conceptualisation; and
- country of study origin.

The study of Anderson *et al.* (2004: 156) revealed the following about methodology and data collection methods: 80 percent of studies were cross-sectional, 80 percent of studies made use of survey-based questionnaires to collect data, and no studies made use of an experimental method where an intervention was used.

Crossan and Apaydin (2010: 1161) did not draw any conclusions on the research approaches that were used to study innovation, but they did provide a breakdown of the type of research that was utilised to study innovation. A breakdown of these types of research is depicted in Figure 5.1.

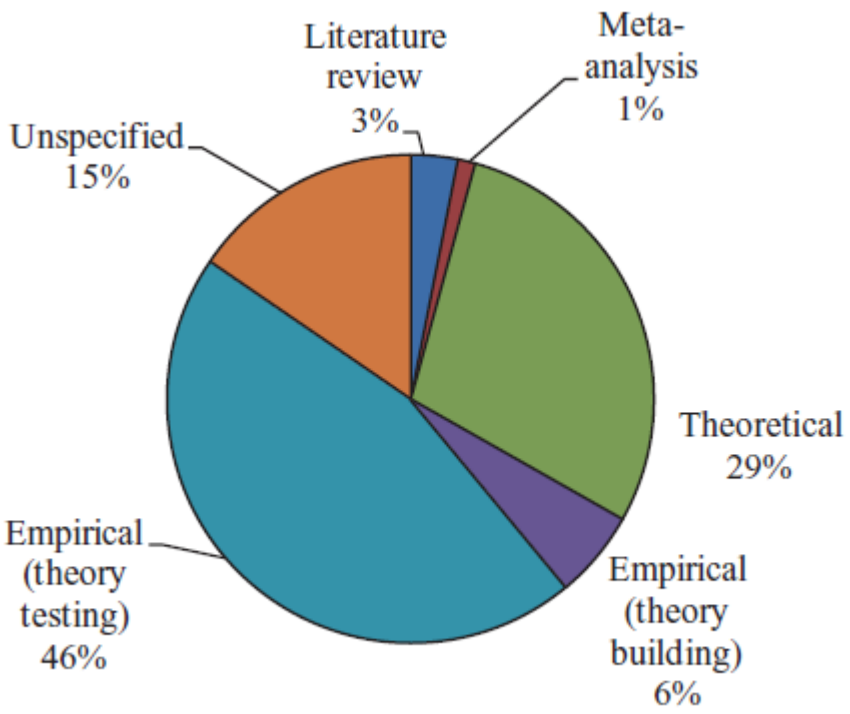

Figure 5.1: Breakdown of the types of research used to study innovation

Source: Crossan & Apaydin, 2010: 1161.

Anderson *et al*. (2014: 1317) summarised measurement methods applied in innovation research at different levels of analysis. They found that studies have most frequently measured innovation at the individual and team levels in terms of survey-based questionnaires, while at the organisational level, a considerable number of studies used secondary objective data sources such as an organisation's own archives.

Anderson *et al.* (2014: 1310) also found that research that conceives processes as antecedents far outweighs research that addresses processes in real time either in organisational or experimental settings.

In essence, the meta-analyses revealed that experiments such as research techniques have very seldom been applied for studying innovation. In support of this conclusion, the study by Sørensen *et al*. (2010: 313) composed a compelling argument that the use of experiments as a research method has been given too small a role in innovation-related research. Sørensen *et al*. (2010: 313) further argued that the experiment as research method may present an important avenue for

attaining knowledge complementary to that which is provided by the traditionally applied methods in innovation research, i.e. survey- and questionnaire-based methods and case studies.

Anderson *et al*. (2014: 1321) verified that with regards to intervention studies, they failed to locate a single adequately conducted and reported study that employed a genuine intervention design at any of the levels of analysis considered, although some experiential case studies are written up in the wider organisational development literature. Anderson *et al*. (2014: 1321) called for "fully functional, pre- and post-measurement designs, preferably with the use of experimental and control group designs in real life organizational interventions with the express aim of improving individual-, team-, or organizational-level innovativeness". Anderson *et al*. (2014: 1321) regarded such intervention studies at the individual and team levels as being the most feasible to conduct, and recognised that these studies will give direct empirical evidence on the efficacy of a range of innovation training techniques that have mushroomed in the consultancy arena.

5.2.5 Types of research

The case has been made in Section 5.2.2 that business research produces information to reduce uncertainty and it was also reasoned above in Section 5.2.3 that the nature of the problem will determine the type of research (exploratory, descriptive or causal). The nature of the problem has been explained and the types of research are addressed in this section.

Business research can be classified based on either technique or purpose. Experiments, surveys and case studies are just a few common research techniques. Classifying business research on the basis of purpose allows the researcher to understand how the nature of the problem will determine whether the research is (1) exploratory, (2) descriptive, or (3) causal (Zikmund, 2003: 54).

Exploratory research is conducted to clarify ambiguous problems and provide information to use in analysing a situation. Usually, exploratory research is performed with the expectation that subsequent research will be required to provide conclusive evidence. Exploratory research can help to crystallise a problem and identify information needs for future research (Zikmund, 2003: 55).

The main purpose of descriptive research, as the term implies, is to describe characteristics of a population or phenomenon (Zikmund, 2003: 55). This was not the objective of this study.

The main purpose of causal research is to identify cause-and-effect relationships amongst variables. Zikmund (2003: 56) pointed out that exploratory and descriptive research normally precede cause-and-effect relationship studies. Causal research attempts to establish that when one thing is done, another thing will follow.

Concerning the research technique, surveys and other quantitative approaches have proved adequate to measure and understand innovation processes following fixed patterns, and case studies have succeeded in providing prescriptive models of how to design and control relatively simple consecutive stages of innovation processes. However, recent theories indicate that innovation processes consist of complex social interactions which these earlier models cannot embrace (Sørensen *et al.*, 2010: 313).

Hence, in light of the nature of the research problem, and the way in which innovation was defined for this study, this research comprised both exploratory and causal research objectives.

The particulars of each type of research in the context of this study are given below.

5.2.5.1 Exploratory research

Much, but certainly not all, exploratory research provides qualitative data. Usually, exploratory research provides greater comprehension of a concept or crystallises a problem/opportunity, rather than providing precise measurement or quantification (Zikmund, 2003: 111). The focus of such qualitative research is not on numbers, but on words and observations: stories, visual portrayals, meaningful characterisations, interpretations and other expressive descriptions (Zikmund, 2003: 111).

The purpose of exploratory research is intertwined with the need for a clear and precise statement of the recognised problem and exploratory research is useful when the researcher does not know the important variables to examine (Creswell, 2008: 18). Zikmund (2003: 111) listed three interrelated purposes for exploratory research:

i) diagnosing a situation;
ii) screening alternatives; and
iii) discovering new ideas.

The major benefits of firstly doing qualitative, exploratory research in this study were that the main constructs were more fully comprehended and furthermore that variables related to the main constructs could be deduced for hypothesis testing in the next phase (Zikmund, 2003: 132).

It was established in the literature review that S-E and POS have a significant influence on IIB. By firstly conducting an exploratory phase in this study, idea implementation could be investigated through the lenses of S-E and POS in order to identify the specific behaviours that influence idea implementation under the auspices of S-E and POS.

The details of the initial exploratory phase which was conducted for this study are discussed in Chapter 6 below, which covers the design of the qualitative phase (Phase One) of this research project.

5.2.5.2 Causal research

The main goal of causal research is to identify cause-and-effect relationships among variables. In causal studies it is typical to have an expectation of the relationships to be explained (Zikmund, 2003: 56). Hence, a typical causal study changes one variable and then observes the effect on another variable (Zikmund, 2003: 57).

A causal relationship exists if (Shadish, Cook & Campbell, 2002: 6):

(1) the cause preceded the effect;
(2) the cause was related to the effect; and
(3) no plausible alternative explanation can be found for the effect other than the cause.

According to Shadish *et al*. (2002: 6), the three characteristics listed above mirror what happens in research in which the researcher:

(1) manipulates the presumed cause and observes an outcome afterward;

(2) perceives whether variation in the cause is related to variation in the effect; and

(3) uses various methods during the investigation to reduce the plausibility of other explanations for the effect, along with ancillary methods to explore the plausibility of those that cannot be ruled out.

Zikmund (2003: 57) counselled that it is difficult to identify complex causal factors within complex organisational environments and in accord with Shadish *et al. (*2002: 6), prescribed the following steps for research for the purpose of inferring causality:

(1) Establish the appropriate causal order or sequence of events;
(2) Measure the related variation between the presumed cause and the presumed effect; and
(3) Recognise the presence or absence of alternative plausible explanations or causal factors.

Hence, the experiment as research technique is well suited to study causal relationships. No other scientific method regularly matches the characteristics of causal relationships so well (Shadish *et al*., 2002: 7).

The details of the experiment which was conducted for this study are discussed in Chapter 7, which covers the design of the quantitative phase (Phase Two) of this research project.

5.2.6 Approach to inquiry

It has been established that innovation and innovative behaviour are complex phenomena. Furthermore, a need exists to study these phenomena in a contextual environment, meaning in the "run-of-the-mill" existence of the organisation where useful ideas are being implemented by individuals surrounded by their everyday realities and challenges (Nayak, 2008: 423).

Apart from the nature of the problem for this study, Anderson *et al*. (2004: 165) also advised that in innovation research (as in most other areas in organisational behaviour), where it is clearly important to have both internal and external validity, it is extremely useful to use a multitude of research methods to come to sound and robust conclusions. Anderson *et al.* (2004: 165) argued that only when different research methods are combined, and when different operationalisations of innovation are used, can a more complete picture be painted of the innovation process to achieve high internal as well as external validity.

Taking the nature of the problem into consideration as well as the view of Anderson *et al.* (2004: 165), led to the realisation that a requirement existed to firstly obtain a fuller comprehension of the main constructs (S-E and POS) as they transpire in organisations with exploratory research through a qualitative approach; and secondly to test these insights (findings) empirically with a quantitative approach. This approach is depicted in Figure 5.2 below.

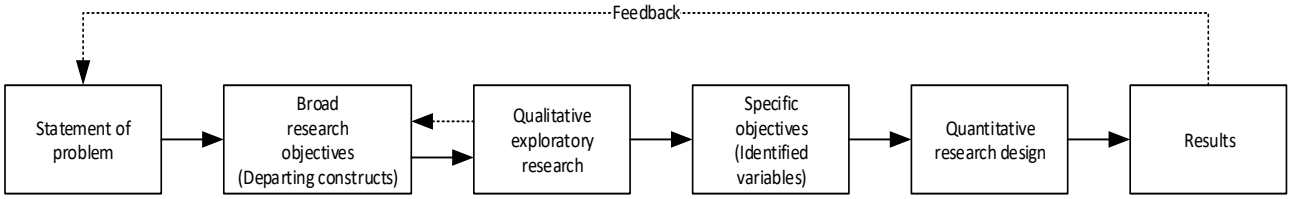

Figure 5.2: Exploratory qualitative research followed by quantitative research

Therefore, the chosen approach to inquiry (Creswell, 2008: 11) for this study was a mixed method approach, employing a combination of qualitative and quantitative approaches. A mixed method design is useful when either the quantitative or qualitative approach alone is inadequate to best understand a research problem or when the strength of both quantitative and qualitative research can provide the best understanding (Creswell, 2008: 18), which was the case for this study.

For this study, the objective was to identify and explore key behaviours related to S-E and POS in the context of idea implementation, and generalise the findings to a population. Therefore, the researcher first aimed to determine what variables to investigate and then studied those variables with a large sample of individuals.

Mixed research approaches offer the best of both worlds of research approaches: the in-depth, contextualised, and natural insights of qualitative research, coupled with the more efficient but less rich or compelling predictive power of quantitative research (Saunders *et al.,* 2007: 146).

Sequential mixed method procedures are those in which the researcher seeks to elaborate the findings of one method with another method (Creswell, 2008: 14). More specifically, a sequential exploratory approach was followed (Creswell, 2008: 211), involving an initial exploratory phase of qualitative data collection and analysis to provide a fuller comprehension of the main constructs and related behaviours, followed by a second phase of quantitative data collection and analysis in order to determine the extent of the phenomena under investigation in numbers (Zikmund, 2003: 111).

The rationale for using both qualitative and quantitative data is that a suitable experiment of the selected variables could best be developed after a preliminary exploration of the behaviours associated with S-E and POS in the context of idea implementation in an organisation. The details of both phases are discussed respectively below.

5.2.7 Summary of the approach to inquiry

The purpose of business research is to provide information for decision making. Decision making is concerned with resolving a problem or exploiting an opportunity. The problem/opportunity for organisations identified in this study was that employees sometimes have potentially useful ideas, i.e. ideas that can make a difference and realise benefits for the organisation, but they do not always successfully implement their ideas. Thus, organisations lose out on exploiting the benefits of these ideas.

This is an ambiguous problem, since the nature of the problem to be solved is unclear as the argument has been made that innovation involves complex behaviours. Investigating how innovation has been studied previously in the context of people taking action on ideas in organisations revealed that S-E and POS are two key constructs from an individual and an organisational perspective in the course of employees taking action on ideas. Hence, these two constructs (S-E and POS) were firstly explored qualitatively to gain a better understanding of their attributes and their possible influence on idea implementation. Subsequently, after identification of specific variables (related to S-E and POS) with a possible influence on idea implementation, these variables were investigated quantitatively through an experiment together with the constructs of S-E and POS to determine the extent of their effect on idea implementation in numbers (Zikmund, 2003: 111).

CHAPTER 6
PHASE ONE: SCM APPLIED ON 4 NAMIBIAN ORGANISATIONS

6.1 INTRODUCTION

The first phase of the mixed methods approach was exploratory. The purpose of this phase was to explore how the constructs of S-E and POS manifest in idea implementation in an organisation and to identify and explore variables related to the constructs of S-E and POS in the context of employees' idea implementation in an organisation, as per Objective 1 stated in Section 1.3. This was achieved by obtaining insight from people who were actually successful in implementing their ideas in an organisation and the chosen method for gaining these insights was the Success Case Method (SCM) of Brinkerhoff (2003).

6.2 SUCCESS CASE METHOD

The Success Case Method (SCM) was developed by Brinkerhoff (2003: 2) as a way to find out what groups/individuals have been successful in achieving a specific business result and why they have been successful; and what groups/individuals have been unsuccessful in achieving a specific business result and why have they been unsuccessful.

The SCM was chosen for this phase of the study because it is a proven method, rooted in solid scientific and evaluative inquiry (Brinkerhoff, 2003: 22), to achieve the following:

- Identify and explain the differences between performers who are successful in implementing change and those who are not;
- Identify the factors that contribute to intervention success or failure; and
- Provide rich information related to the direct results of the intervention.

Also, it has been argued above that innovation is about change, and the SCM is a distinguished method for establishing what works and what does not regarding change (Brinkerhoff, 2003: 2).

The following process was followed to execute the SCM:

(1) Define what success should look like. In this study, success was taken as the successful implementation of a potentially useful idea in an organisation, and how the resulting implementation brought about a change in the way of doing things and realised some form of benefit.

(2) Identify success cases and non-success cases in an organisation. A success case involved a person who has generated and successfully implemented an idea; and a non-success case involved a person who has generated an idea, but did not implement it successfully.

(3) Conduct in-depth interviews of selected success and non-success cases, to document the participants' experiences and to probe for the behaviours and factors related to the main constructs for this study (S-E and POS) which contributed to success as well as factors that prevented it.

(4) Analyse the data collected through the in-depth interviews to identify the factors and behaviours – related to S-E and POS – which enabled success as well as prevented success.

(5) Present conclusions and formulate the variables for the next phase of the study.

The main motivation for using the SCM for Phase One as opposed to deducting the variables related to S-E and POS from the literature, was because previous studies involving S-E and POS did not specifically study these constructs in the context of idea implementation by employees in an organisation. Concerning S-E, it was argued in Section 3.2.5 above that S-E is a judgment of specific capabilities (Beck, 2008, cited in Redmond 2016) and S-E judgments are both task and situation specific (Pajares, 1997: 3).

It was also stated in Section 3.3 that only a few studies could be found where S-E had been studied with regards to IIB in the context of organisational innovation (Tierney & Farmer, 2002; Kumar & Uzkurt, 2010; Ahlin *et al.*, 2014); and the studies providing empirical evidence of the positive relationship between innovative behaviour and POS are also rather sparse (Lloréns Montes *et al.*, 2004: 169; Pundt *et al*., 2010: 178; Alpkan *et al*., 2010: 733).

Examining the above-mentioned studies related to S-E revealed that the study by Tierney and Farmer (2002: 1138) did not clarify whether their concept of "creative outcomes" only referred to creative ideas, or also included the implementation of the ideas; the study by Kumar and Uzkurt (2010) hypothesised a relationship between S-E and innovativeness of an individual, mediated by cultural dimensions; and Ahlin *et al*. (2014) studied the role of an entrepreneur's personal efficacy-related beliefs in the innovation pursuits of SMEs. Thus, none of these studies included the specific context of an employee implementing an idea in an organisation.

Examining the studies relating POS to IIB (See Table 4.2 in Section 4.4) revealed that West and Anderson (1996) considered POS related to team innovation; Dougherty and Hardy (1996), explored POS in the context of the success of a product; Antoncic and Zorn (2004) conducted a study which found causal links between organisational support and types of product and technological innovations; and Hornsby *et al.* (2009) investigated POS in the context of "corporate entrepreneurship".

Thus, a sound argument could be made for using the SCM to uncover variables associated with S-E and POS which are specifically related to the context of idea implementation by employees in an organisation, which could not be necessarily uncovered by an examination of the literature.

Lastly, it is also worth mentioning that the execution of the SCM led to the researcher gaining a deep understanding of how idea implementation by employees unfolds in an organisation, and this understanding proved valuable for Phase Two of the study where the selected variables had to be presented in a realistic manner to the participants of the study. In other words, conducting the interviews for the SCM provided an "intimate" understanding of what employees go through when implementing an idea, an understanding which an analysis of the literature could arguably not provide.

6.3 SAMPLE SELECTION

The sampling process consists of defining the target population; determining the sample criteria, selecting a sampling method and procedure; and determining the sample size (Given, 2008: 799).

6.3.1 Target population

The emphasis of this study was on organisational innovation. For this study, innovation is regarded as the successful implementation of useful ideas by employees in an organisation, in order to realise some expected benefit through affecting change in the organisation – signified by the construct of IIB (as discussed in Section 2.3.3). Therefore, the target population for this study was employees of business organisations with the potential to generate useful ideas that could be implemented to affect a change and evoke an anticipated benefit.

6.3.2 Sampling criteria

In terms of selecting a sample, based on the explanation of the target population, the first criterion for finding the target population was that the individual was part of a business organisation where innovation is valued and expected from employees. Organisations, for the purpose of this study, were taken as general business organisations which operate in a competitive market environment in the private sector and which provide goods and services to the general public on a for-profit basis. For example, this definition included banks, retail stores, manufacturing businesses that sell directly to the public, etc., and this definition excluded government organisations, not-for-profit organisations, hi-tech industries, political organisations, etc.

Concerning organisations that value innovation, it was established in the literature that innovation provides an organisation with the means of creating a sustainable competitive advantage (Tidd *et al*., 2001: 4; West, 2002: 366; Egbu, 2004: 305; Damanpour *et al*., 2009: 650; Anderson *et al*., 2014: 1298); innovation is associated with economic progress and impact (Christensen *et al*., 2003; Birkinshaw *et al*., 2005; Fagerberg, 2003); and innovation is positively related to superior

organisational performance (Lawson & Samson, 2001: 389; Vincent *et al*., 2004: 18). Four business organisations were identified which conformed to the criteria of having sustainable competitive advantage, having an impact, economic progress and superior organisational performance. At the time of the research, all the identified organisations had been in business in Namibia for more than 20 years and were regarded as market leaders in their respective industries, which include the Agriculture, Manufacturing, Fast Moving Consumer Goods, Retail and Financial industries.

Secondly, the focal sampling criterion for employees within these organisations was that these employees had to be perceived by their managers/peers/subordinates to have the potential to engage in innovative behaviour at their workplaces (Yuan & Woodman, 2010: 323). More specifically, these individuals had to be perceived to have the potential to initiate and introduce (within a work role, group or organisation) new and useful ideas, processes, products or procedures (De Jong & Den Hartog, 2010: 24). Examples of such behaviour include searching for new technologies, suggesting new ways to achieve objectives, applying new work methods, and investigating and securing resources to implement new ideas (Yuan & Woodman, 2010: 324).

Furthermore, it takes some time for an employee to become acquainted with the organisations' people, processes, procedures and culture concerning innovation (Bessant, Caffyn & Gallagher, 2001: 69). Hence, as an additional criterion, an employee had to have worked for their organisation for a minimum of one year to be eligible for selection for this study.

6.3.3 Sampling method

Non-probability sampling techniques were used in this phase to select participants (Given, 2008: 562).

Non-probability sampling is a common technique in qualitative research where researchers use their judgment to select a sample. Unlike probability sampling, where each participant has the same chance of being selected, participants selected using the non-probability sampling technique are chosen because they meet pre-established criteria, as described above. Some of the more common types of non-probability sampling techniques are convenience sampling, snowball sampling, and purposive sampling (Given, 2008: 562). In convenience sampling, participants are selected because they are accessible and therefore relatively easy for the researcher to recruit. With snowball sampling, new participants to the study are recruited when current participants refer other, potential participants to the researcher (e.g. as they are members of the same group or share similar interests that are relevant to the project at hand). Purposive sampling refers to a process where participants are selected because they meet criteria that have been predetermined by the researcher as relevant to addressing the research question. These three techniques each

highlight that non-probability sampling requires the researcher to make the final decision in terms of who does and who does not participate in the study (Given, 2008: 562).

These techniques are often used together to recruit individuals to participate in a study, which was the case in this research project, as explained below.

6.3.4 Sampling procedure

The researcher first approached selected organisations in the sampling frame to engage a suitable contact person within the organisation. The point of engaging a contact person was firstly to obtain the required permission to do the research, and secondly to utilise this person as a liaison to assist with the other arrangements and operations involved in conducting this research within the relevant organisation. Through prior engagements, the researcher had an established business relationship with the selected organisations' contact persons, making them accessible, constituting convenience sampling.

In general, organisations do not necessarily keep track of every innovative idea that is generated or implemented, and consequently, the sampling criteria of the required individuals were explained to the contact person, constituting purposive sampling. The contact persons then liaised with their colleagues to identify individuals who fit the criteria, and some of the employees enlisted through this process in turn recommended potential co-workers who met the eligibility criteria for this study, constituting snowball sampling.

Once individuals had been nominated (either by the contact person or a co-worker), the researcher engaged in a short conversation with the relevant person to confirm whether they were indeed a suitable candidate based on the sampling criteria, and to obtain their consent to participate in the research. After agreement to participate, formal interviews were scheduled with the selected participants.

6.3.5 Sample size

Since the objective of qualitative research is to understand and give meaning to a social process, rather than quantify and generalise to a wider population, it is unfitting to use random sampling or apply statistical tests. Sample sizes used in qualitative research are usually very small and the application of statistical tests would be neither appropriate nor feasible.

Exploratory research cannot take the place of quantitative, conclusive research. Before a scientific decision can be made, a quantitative study with an adequate sample should be conducted to ensure measurement is precise (Zikmund, 2003: 132), which was the purpose of Phase Two of this study. However, the objective of this first exploratory phase was to collect data to investigate the

phenomenon of interest and to generate insights and clarify the problem for hypothesis testing in the second phase.

Saturation is the point in data collection when no new or relevant information emerges with respect to the phenomenon under investigation (Given, 2008: 195). Hence, a researcher looks at this as the point at which no more data needs to be collected. When there appears to be no more unexplained phenomena, saturation has been achieved (Given, 2008: 195). As a result, the data collection process is considered to be complete only when saturation has been achieved. However, reaching saturation is considered to be somewhat relative in that if researchers perpetually collect new data and look for new information, eventually something novel and pertinent may emerge (Given, 2008: 195). This is especially the case concerning innovation, since innovation per definition contains an element of newness (Baregheh *et al*., 2009: 1334; Janssen *et al*., 2004: 130). Nonetheless, researchers need to decide when collecting new data will result in diminishing returns, with new details adding little to the emerging concepts (Given, 2008: 195).

Most exploratory techniques utilise small sample sizes, which may not be representative because they have not been selected on a probability basis (Zikmund, 2003: 132). This is not to say that this exploratory phase lacks value, it simply means that it cannot deliver what it does not promise. Some researchers consider a sample size of 15 to 20 as appropriate for saturation of themes during analysis; however, the sample size will vary depending on the context and content under study (Given, 2008: 195). Twenty participants were eventually included in Phase One of this study.

6.4 DATA COLLECTION

With the SCM, data is collected by means of interviews. Face-to-face in-depth interviews were conducted with the selected participants to probe for factors related to the main constructs for this study (S-E and POS), i.e. factors that contributed to success and factors that prevented it.

The SCM interview process is both open ended and highly structured (Brinkerhoff, 2003: 65). It is open ended in that the interviewer has to be open and ready to discover unexpected information and to doggedly follow leads and "hunches" (Brinkerhoff, 2003: 65). The aim is to capture and document the very particular and personal ways in which an innovation or intervention has been used to achieve successful results. Thus, the SCM interviewees were allowed to lead the interviewer and tell their stories freely. The researcher was open to learn from the interviewees because if it was known exactly what the cause of their success was, and thus every response and nuance could be predicted, there would be no need for this method in the first place.

At the same time, a high degree of structure is needed. For reasons of practicality, a success case interview usually cannot last for longer than 45 minutes to an hour, so there is a lot of information to be gleaned in a relatively short while. Hence, although the interviewer was open to new

information and discoveries, there were nonetheless particular bases to be covered and thus the interviewer firmly guided the interview and asked sharply targeted questions (Brinkerhoff, 2003: 29). Therefore, the interviewer made sure that all of the critical dimensions of success were covered (e.g. changed happened, benefits were realised, etc.) and that the success story was credible and accurate. The researcher also searched for and explored those factors (revealed through the literature on S-E and POS) which had enabled the interviewees to be successful.

The researcher followed the interview protocol and interview process prescribed by Brinkerhoff (2003: 134) to conduct the interviews, as provided in Table 6.1, and the full interview guide which was developed accordingly, is included in Appendix A.

Table 6.1: Basic Success Case Method interview process

Step	Description
Step 1: Opening	Establish who you are and why you are conducting the interview. At this point in the interview, the interviewer has to make sure that the person being interviewed understands what the purpose of the interview is and that all information is to be treated as anonymous and confidential.
Step 2: Qualification	Make sure that it is really a worthy success case. Not all potential success cases turn out to be valid or confirmable. Thus, the first thing to explore after the opening is the nature of the success the interviewee has claimed, then quickly probe to see if it is worth pursuing further.
Step 3: Probing phase	Get all the required information through enough probing questions to document the success case as well as any helping or hindering factors.
Step 4: Closing	End the interview. Thank the interviewee and ask if there were anything else they would like to tell the interviewer or think the interviewer needs to know.

Source: Brinkerhoff, 2003: 134.

Lastly, McCracken (1988: 43) cautioned that investigators who transcribe their own interviews invite not only frustration but also a familiarity with the data that does not serve the later process of analysis. Therefore, all the interviews were recorded on a dictaphone, and were transcribed by a professional transcriber.

6.5 ETHICAL CONSIDERATIONS

The researcher requested approval from the Research Ethics Committee: Human Research (Humanities) on 27 January 2016. Ethical approval for Phase One was granted on 21 April 2016 (Protocol # SU-HSD-001997) subject to standard stipulations. Standard stipulations were followed during the research, namely consent from participants, voluntary participation, anonymity and confidentiality of responses.

6.6 DATA ANALYSIS

As explained above, the nature of Phase One was exploratory and the objective was to identify and explore variables related to the constructs of S-E and POS in the context of idea

implementation by employees in an organisation - as per Objective 1 stated in Section 1.3. The chosen data collection method was in-depth interviews employed through the SCM.

Data analysis is an integral part of qualitative research and constitutes an essential stepping-stone toward both gathering data and linking one's findings with higher order concepts. The method for data analysis must also be aligned to the research objectives. Hence, the aim of the data analysis process was to make sense out of the interview data (Creswell, 2008: 183) and through different analyses, move deeper and deeper into understanding the data to ultimately interpret the larger meaning of the data related to the research objectives.

Regardless of the perspective or paradigm used, the analysis of qualitative data involves a number of common features. These include simultaneous data collection and analysis (as the analysis of the data actually begins from the onset and continues throughout the project), the practice of writing field notes and memos during and after data collection, the use of some sort of coding, the use of writing as a tool for analysis, and the development of concepts and connection of one's analysis to the literature in one's field (Given, 2008: 186). All these features were applied during the data analysis process, described in more detail below.

It must be pointed out here that although it might seem that the data analysis procedure is depicted as a linear process (as displayed in Figure 1.5 in Section 1.4.1.3 above), in reality, data analysis is an ongoing iterative process involving continual reflection about the data, asking analytical questions, writing memos throughout the study (Creswell, 2008: 184) and constantly moving back and forth between the different stages of analysis.

Figure 6.1 below provides a visual indication of all the actions and processes involved in qualitative data analysis and to some extent an interpretation of the "linear but non-linear" nature of the method.

To aid the data analysis process, network diagrams were constructed in Atlas.ti. The representation of the data in this manner promotes conceptualisation of the relationships between concepts, categories and themes and linking them to the evidence in the data supporting the relationships. As an example of this practice, the network diagrams for S-E and POS are shown in Appendix B in Figure B.1 and Figure B.2 respectively.

The different steps, actions, processes and stages that were followed as part of the data analysis process are described in more detail below.

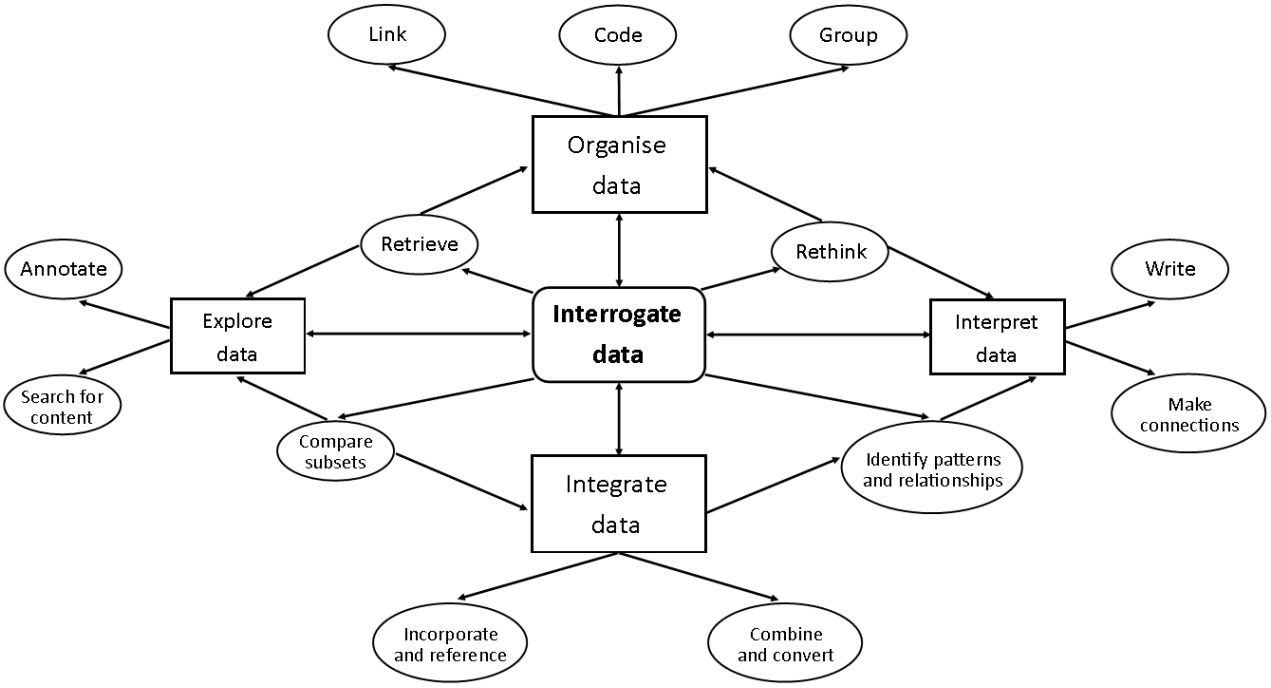

Figure 6.1: The processes of qualitative data analysis

Source: Adapted from Atlas.ti, 2017.

The qualitative data (in-depth interviews) was digitally audio-recorded and professionally transcribed verbatim – representing a written account of the recorded conversation, thereby making the information from the interview more accessible for analysis. The audio files and the transcripts were then uploaded into Atlas.ti, a qualitative data analysis (QDA) software program. Atlas.ti has a function where the transcript text can be associated to the audio version, i.e. as the audio version plays, the associated text is displayed simultaneously. Hence, after upload the transcripts were checked immediately to ensure no meaning had been lost and to allow the researcher to reacquaint himself with the data.

The researcher then categorised the respondents by age, gender, years of service (“experience”), type of business, department, position, idea type, idea successful or not successful.

During this initial stage of analysis the researcher also transferred the field notes made during the interviews to the Atlas.ti system and linked them to the relevant interviews so that all the applicable information of each interview was amassed in the same digital record.

During the interviews, the field notes were just jotted down on the interview guide. In field notes, qualitative researchers record in-depth descriptive details of people (including themselves), places, things, and events, as well as reflections on data, patterns, and the process of research. These details form the context and quality control that shape multiple qualitative data points into articulated, meaningful, and integrated research findings (Given, 2008: 341). At this point, only the

details of the interviews and participants were recorded in the field notes – referred to as "descriptive elements" (Given, 2008: 341); and the reflections on data, patterns, and other realisations – referred to as "reflective elements" (Given, 2008: 342) were only recorded during the subsequent analysis. The researcher also kept notes (memos) on insights, ideas, patterns, and connections that occurred to him as he read and reread the data during the analysis phase. This activity, known as "memoing" (Given, 2008: 86), occurred throughout the coding process and was facilitated through the functionality of Atlas.ti.

Next, the researcher started to code the data. In qualitative research, coding is the process of generating concepts, categories and themes from raw data such as interview transcripts, field notes, archival materials, reports, newspaper articles, images, audio files and art (Given, 2008: 85). In this study, the raw data consisted of audio files, interview transcripts, field notes and memos. Hence, the goal of code creation was to identify concepts, categories and themes by making their criteria explicit and providing evidence for them – and the conclusions based on them – that was drawn from the data.

More specifically, the coding process refers to the steps the researcher took to identify, arrange, and systematise the concepts, categories and themes uncovered in the data (Given, 2008: 85). Coding consisted of identifying potentially interesting events, features, phrases, behaviours, or stages of a process and distinguishing them with labels. These were then further differentiated or integrated so that they could be reworked into a smaller number of categories, relationships, and patterns so as to tell a story or communicate conclusions drawn from the data (Given, 2008: 85).

A coding frame – a scheme that lays out key concepts, their definitions, and criteria for recognition – evolved over time during the coding and analysis of the data. The coding frame was subject to change and refinement as the researcher proceeded with successive passes through the data (Given, 2008: 85). Code notes also helped the researcher to keep track of the emergent definitions of codes and their distinctive criteria. The code notes and coding scheme for this study were created and maintained in Atlas.ti.

Concerning the actual coding process, the coding started with attention to very fine details and evolved into emergent categories and themes that were applicable at much higher degrees of abstraction, and the researcher employed three coding methods, namely initial or open coding, axial coding and selective coding (Given, 2008: 86).

These methods have their origin in the grounded theory approach to qualitative data, associated with Glaser and Strauss (1967), and Strauss and Corbin (1998) as the most prominent source of an explicit set of techniques and procedures for coding and processing data. The grounded theory approach of Strauss and Corbin (1998) – where the development of theory as emergent from the data is more heavily emphasised (Given, 2008: 86) – is structured and systematic, with set

procedures to follow at each stage of analysis. However, grounded theory may be approached as a strategy as much as a set of procedures. Such an approach may therefore result in the process of analysis being conducted in a less formalised and proceduralised way while still maintaining a systematic and rigorous approach to arrive at a grounded explanation and solid conclusions (Saunders *et al*., 2007: 499).

Therefore, the open, axial and selective coding methods of the grounded theory approach were more applied as a strategy in this study, since these methods closely resembled what happened in practice during the data analysis process. In support of this approach, the researcher refers to Given (2008: 86) who noted that although most writers on coding practices acknowledge their debt to the grounded theory approach, many urge relaxing one or another of the recommendations in hopes of stimulating creativity and insight (Given, 2008: 86).

Simultaneously with the coding processes, more field notes and memos were also created to aid the analysis of the data. Concise definitions of each coding method are given below, followed by an explanation of the actual steps that were taken for each respective method as well as the results of each method. The researcher wants to point out again that although the portrayal of the coding methods indicates a progression in the coding process from identifying new concepts to refining and integrating existing categories, one should not think of the process of coding as linear (Given, 2008: 87). It is more of an interactive practice (Creswell, 2008: 185), the various stages are interrelated and were not necessarily visited in the order presented as the researcher constantly moved back and forth between the different methods and stages.

The coding processes are discussed in more detail in the next sections. Firstly, concise explanations of the three coding methods are provided: The labelling of concepts during the early stages of coding is referred to as *open coding*. During successive stages of coding, the researcher begins to home in on and refine more specific categories and their properties, examining in depth one category at a time. This is referred to as *axial coding*. A still further focus on particular links and relationships among a few chosen categories (the integration of categories) to develop themes, is referred to as *selective coding* (Given, 2008: 86).

6.6.1 Open coding

During the initial stage of open coding, the focus was on bringing order to and making sense of the data, and the researcher undertook a close line-by-line reading of the data in a search to identify as many concepts as possible.

Some believe that one should begin the coding process without the influence of existing ideas and concepts (Given, 2008: 86). A more prevalent stance, however, is that this is not possible given most researchers' knowledge of their discipline and of the particular areas they are researching

(Given, 2008: 86). Those who adopt this stance (take prior knowledge into consideration; Given, 2008: 86) advise using concepts and categories to which one has been sensitised while staying alert to other possible notions, concepts, and themes – which was the approach taken in this study.

With this data analysis exercise, the coding process alternatively had both inductive and deductive elements (Given, 2008: 87). The insights that emerged from the literature review regarding the constructs under study were used as a guideline to draw up preliminary concepts and categories as well as note themes and patterns that were revealed through the data (deductive); and some newly discovered concepts, categories and themes emerged from the data (inductive) as well.

The researcher also applied a tactic for this stage recommended by a number of researchers (Given, 2008: 68; Creswell, 2008: 185), namely asking questions of the data to help identify ideas and concepts of interest, such as the following:

- What is going on?
- What was done?
- How is it being done?
- Who did it?
- What are the goals?
- What was the meaning of it?
- What was the intent?
- What feelings or thoughts are being communicated?
- What general ideas are participants conveying?
- What is the tone of the ideas?
- What is the impression of the overall depth, credibility, and use of the information?

Coding is dynamic and by attaching concepts to identify quotations, occurrences, meanings, activities, or phenomena, the researcher began to group instances or events that were similar and to distinguish those that differed.

An iterative process was followed until a base set of concepts had been created in which most of the data could be organised.

The beginning stage of open coding the data led to 94 initial concepts, linked to 893 quotations in the text.

Many researchers suggest that open coding should continue until nothing new and interesting emerges, some codes begin to stand out as significant or telling, and links between codes begin to cohere (Given, 2008: 87). These are signs that more focused and integrated coding should be pursued.

6.6.2 Axial coding

Axial coding derives its name from attention during this phase of analysis to the intense coding around the "axis" of one category of interest at a time; and is the stage where concepts and categories that begin to stand out are refined and relationships among them are pursued systematically (Given, 2008: 52).

Hence, during the successive axial coding stage, the researcher took the concepts which made up the top 50 percent (concepts were ranked from highest to lowest based on the number of occurrences of the concept in the interview data) of the open coding stage and began to home in on and refine more specific categories and their properties, examining in depth one category at a time.

To do this, the researcher attempted to cluster similar concepts under chosen categories as well as determine how they were related to other categories. Thus, categories were pursued in greater depth on the way to the identification of core categories and ultimately to the explanation of the phenomena under study (i.e. the selective coding stage).

Also during this stage – in order to be consistent with the matching of the concepts related to the quotations from interviewees to the refined categories, the researcher composed definitions for the relevant categories. For example, the category "Idea generation" was defined as: "This refers to how the person came about the idea, i.e. how the person conceived the idea that was implemented".

During the axial coding process, the researcher also classified the refined categories as influencing S-E or POS – based on the identified list of attributes and the literature review on these constructs and factors. In the event where it was not clear if a specific category belonged to S-E or POS, the researcher took the approach of determining whether the issue was "internal", i.e. within the control of the person, or "external", meaning the person did not have control over the matter. When the issue was deemed internal, it was categorised under S-E, and when the matter was deemed external, it was classified under POS.

Finally, the axial coding process resulted in the 94 concepts created during the open coding process to be reduced to 16 categories, ten classified under S-E and six under POS. Table 6.2 below provides a summary of the categories created during the axial coding stage, including the S-E/POS classification and the relevant initial definitions that were assigned during the coding process.

Table 6.2: Results of axial coding stage

No	Category	Number of occurrences	S-E or POS	Definition
1	Communication	66	S-E	Evidence that the participant utilised communication skills to aid implementation in any manner.
2	Support	41	POS	All data related to support a person received in terms of implementing their idea (any mention of support).
3	Management support	34	POS	Support related to implementation that was given by the person's direct manager or supervisor.
4	Personal characteristics	33	S-E	A reference to a personal trait or characteristic that aided implementation.
5	Culture/Climate	32	POS	Reference to the organisational culture or climate or "the way things work around here".
6	Self-belief	31	S-E	Indication of a person's self-belief related to implementation success.
7	Inquisitive	27	S-E	Where the person displayed curiosity and showed eagerness to figure out things related to the implementation of their idea
8	Preparation	27	S-E	The preparation a person did before selling or pitching an idea.
9	Risk taking	27	S-E	The risk(s) a person experienced related to implementation and how it was dealt with.
10	Idea generation	24	S-E	This refers to how the person came about the idea, i.e. how the person conceived the idea that was implemented.
11	Idea testing	24	S-E	Actions a person took to test an idea. This includes prototyping, the concept of "market research" and experimenting with ideas.
12	Idea selling	21	S-E	This refers to all the actions a person took to sell or pitch an idea, to any audience - managers, co-workers, resources and funders.
13	Support - examples of actions	19	POS	Refers specifically to actions that were taken that were perceived as support.
14	Decision making	18	S-E	All data related to decision making that had an influence on implementation.
15	Teamwork	16	POS	All reference to teamwork that was part of implementation success.
16	Change management	15	POS	All data related to change management (including any relation to selling ideas, implementing ideas and post implementation).

6.6.3 Selective coding

The selective coding stage incorporated a still further focus on particular links and relationships among a few chosen categories (the integration of categories). Hence, as the coding progressed

with the selective coding stage, particular categories emerged as more prominent, as central to integrating a number of key concepts, and/or as being of interest to a particular topic under study. Subsequently, the data was more thoroughly and systematically reviewed with fewer specific concepts or categories in mind, to determine where and how these concepts or categories were exemplified in the data.

In the pursuit of a more refined and focused analysis, many categories were reconceptualised and incorporated into broader, more abstract themes, whereas others were refined by seeking out possible variations in their properties or dimensions. It is through repeated reviewing and coding of the data that links between various concepts and categories were made and relationships among categories began to solidify (Given, 2008: 87).

Hence, the concepts and categories of the open coding and axial coding processes were classified into predominant themes and were further scrutinised in terms of how they related to the theory, in order to determine if they proved or undermined the theory.

According to Creswell (2008: 189), the themes that appear as major findings in qualitative studies "…should display multiple perspectives from individuals and be supported by diverse quotations and specific evidence", and this stage concluded with the linking of explicit quotations from the in-depth interviews as supportive evidence of the predominant themes which were revealed through the preceding stages.

These predominant themes were the major findings of the qualitative stage and formed the behaviours associated with S-E and POS, i.e. through which these constructs influence idea implementation. Consequently, these behaviours formed the basis for formulation of the independent variables and their associated hypotheses for Phase Two of the study.

A number of themes that evolved from the data analysis and explanations for the choice of the specific variables included in Phase Two are provided in the next section.

6.6.4 Variables selected for inclusion in Phase Two

The analysis of the qualitative data revealed a number of themes that appear to influence idea implementation by employees in an organisation, as well as fit the condition of being associated with S-E and POS. Concerning the choice of variables for Phase Two, additional criteria were applied to narrow down the variables to the final selection.

First and foremost, it had to be possible to impersonate the behaviours, and moreover, it had to be possible to present the behaviours in such a manner that they can be experienced as being present or not. The research method involved an experiment in Phase Two and the purpose of this

requirement was to adhere to the principal condition for an experiment, i.e. that the variables must be manipulated and their effects upon other variables observed (Jackson & Cox, 2013: 29).

Hence, this requirement excluded a number of variables. For S-E for example, referring to Table 3.7 in Section 3.4.2 which reviewed the behaviours and practices in support of personal attributes of S-E, and Table 6.2 in Section 6.6.2 which listed the results of the axial coding process, behaviours such as testing ideas, selling ideas, having original ideas, working with others, sharing knowledge, persistence and learning-by-doing would have been challenging to simulate.

Secondly, this study also wanted to make a contribution by examining behaviours that had not been studied comprehensively before, as argued in Section 6.2 above. Thus, the themes uncovered through the selective coding process were compared to Table 3.7 in Section 3.4.2 which reviewed the behaviours and practices in support of personal attributes of S-E, and Table 4.6 in Section 4.6 which reviewed the behaviours and practices in support of the attributes of POS, in order to eliminate variables which have already been studied in the context of IIB. This disqualified variables such as Risk taking (Dewett, 2006; Fidler & Johnson, 1984; Yuan & Woodman, 2010; Alexander & Van Knippenberg, 2014; Jansen *et al*., 2004), Creativity (Tierney & Farmer, 2002; Tierney *et al*., 1999; Choi *et al*., 2009; Hirst *et al*., 2009; Amabile, 1983), and Teamwork (Daniels *et al*., 2011; Breu *et al*., 2002; Kristensen & Kijl, 2010; Lee *et al*., 2012; Wagner, 1995)

Thirdly, some of the factors that were uncovered through the literature review and the analysis process, are such well-established antecedents of innovation that they were regarded as already being present in the scenario that was presented to participants in Phase Two. The presence of these factors in the simulated scenario is discussed in detail in Table 7.2 in Section 7.3.4.4, including factors such as the innovation culture, the cost of innovation, and the change and benefits that innovation brings forth. These factors were thus included in the study as contextual factors and were therefore not eligible as variables being investigated in the experiment.

Lastly, it was alluded to in Section 6.2 above that the execution of the SCM led to the researcher gaining a deep understanding of how idea implementation by employees unfolds in an organisation, and this understanding also proved valuable for having an intuition of which variables to choose and how to present them for the purpose of Phase Two of this study.

In summary, the application of the criteria and process of elimination described in this section, led to the following variables being selected for Phase Two, as listed in Table 6.3 below.

Table 6.3: Selected variables for Phase Two

Main construct	Associated variable
S-E	Preparedness
	Communication
	Inquisitiveness
POS	Managerial confidence
	Active listening
	Consultation

The researcher had concerns about the possibility of manipulation of the variables "Communication" and "Inquisitiveness", but since these two variables featured so prominently during the data analysis process as part of S-E, and many of the behaviours associated with S-E posed challenges for being realistically manipulated, the decision was taken to include these two variables for Phase Two of the study. The reasoning for the possibility of manipulation of these two variables are provided in Section 7.1.

More details are provided on these variables in Section 6.7, and the manifestation of the variables in the experiment are described in Section 7.3.5.

6.6.5 Summary of data analysis stage for Phase One

To summarise, by following the data analysis processes described above, the researcher started by focusing on the finest details of the interview transcripts and, with each successive stage, moved towards more general observations, and ultimately a number of key behaviours were identified as being associated with S-E and POS, and having a potential influence on the implementation of ideas by employees in an organisation. The presence of these behaviours was soundly supported by associated quotes from the relevant participants.

Figure 6.2 below provides a graphic representation of the data analysis process that was followed in Phase One of the study. The sequence of numbers indicates the different coding processes leading to the predominant themes (variables), subsequent comparison with the literature, and the eventual formation of behaviours.

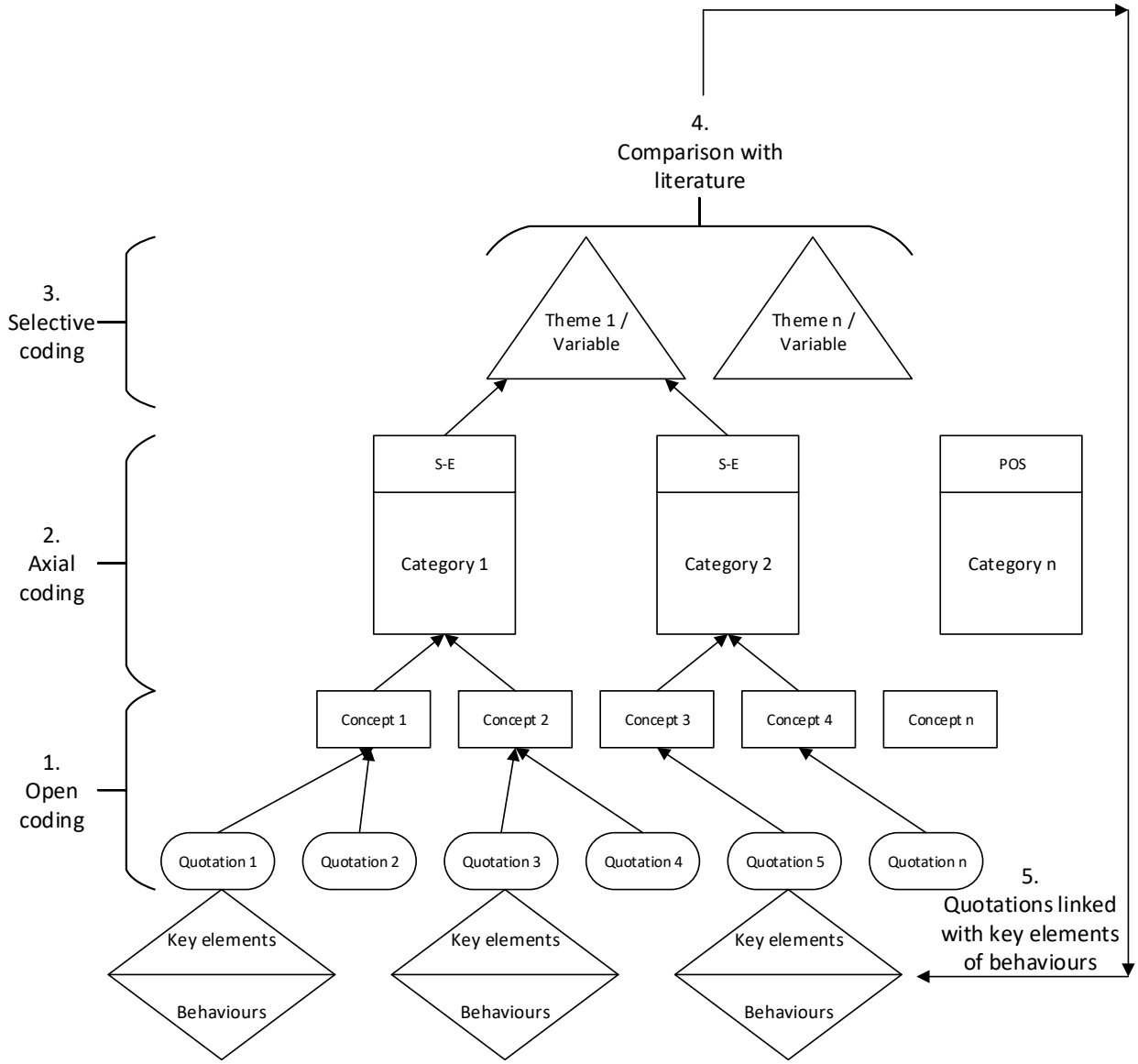

Figure 6.2: Data analysis process for Phase One

Source: Author's own.

These behaviours were taken as the independent variables in Phase Two of this study where an experiment was conducted to investigate possible cause-and-effect relationships between the independent variables and the dependent variable – i.e. the chance of successfully implementing an idea. The identified variables and their supporting evidence are discussed in more detail in the next section, including a concise literature review of previous findings on potential relationships between these behaviours, the constructs of S-E and POS and idea implementation.

6.7 FINDINGS ON SELECTED VARIABLES

In order to meet Objective 1 as stated in Section 1.3, the purpose of Phase One was to investigate the constructs of S-E and POS in the context of the implementation of useful ideas by employees

in an organisation, in order to identify and explore variables related to these constructs, which could be investigated empirically in Phase Two.

To recap, the following six variables were eventually identified for Phase Two of this study: Preparedness, Communication and Inquisitiveness - associated with SE; Active listening, Managerial confidence and Consultation – associated with POS. The explanations for the choice of these variables are provided in Section 6.6.4 above.

Each of these variables is discussed in more detail below, firstly by listing the results of the axial coding stage, i.e. the clusters of similar concepts under the resulting categories, followed by a concise overview of the findings in the literature related to the variable under discussion.

6.7.1 Inquisitiveness

During the axial coding stage, Inquisitiveness was defined as: “Where the person displayed curiosity and showed eagerness to figure out things related to the implementation of the idea”.

During the axial coding stage, Inquisitiveness was further broken down into the following four behavioural elements:

(1) Investigating how things work;
(2) Experimenting with ideas;
(3) Enhancing and simplifying ideas or processes; and
(4) In the habit of learning new things, i.e. having a learning mindset.

The actual quotes providing evidence of the behavioural elements associated with “Inquisitiveness” are provided in Table B1 in Appendix B, and Table 6.4 below provides a summary of the key elements featuring in the participants’ narrative which supported the formulation of the relevant behaviours.

Table 6.4: Key elements of behaviours associated with Inquisitiveness

Behaviour	Key elements
Investigating how things work.	A desire to understand how something works.
	Not only a desire to understand how something works, but also considering what more can be done with it.
Experiment with ideas.	Try different actions to see what happens.
Enhance and simplify ideas/processes/“things”.	Try to streamline processes and increase efficiencies.
In the habit of learning new things – learning mindset.	Read about different subjects, watch news, always searching for new knowledge.

Investigation of the literature for a relationship between inquisitiveness and IIB, revealed that "inquisitiveness" has mostly been studied as "curiosity" by researchers (Karwowski, 2012; Mussel, 2013; Mussel *et al*., 2012; Loewenstein, 1994). Kashdan and Silvia (2009: 368) defined curiosity as follows:

> "Curiosity can be defined as the recognition, pursuit, and intense desire to explore novel, challenging, and uncertain events. When curious, we are fully aware and receptive to whatever exists and might happen in the present moment. Curiosity motivates people to act and think in new ways and investigate, be immersed, and learn about whatever is the immediate interesting target of their attention. This definition captures the exploratory striving component and the mindful immersion component. By focusing on the novelty and challenge each moment has to offer, there is an inevitable (however slight) stretching of information, knowledge, and skills. When we are curious, we are doing things for their own sake, and we are not being controlled by internal or external pressures concerning what we should or should not do".

The four identified behavioural elements related to Inquisitiveness, namely: 1 – investigating how things work ("explore novel, challenging events"); 2 – experimenting with ideas ("exploratory striving component"); 3 – enhancing and simplifying ideas or processes ("act and think in new ways"; 4 – a learning mindset ("learn about whatever is the immediate interesting target"), all clearly feature in this definition.

Furthermore, concerning the traits of inquisitive people, the literature revealed that inquisitive people display behaviours such as: seeking of information, knowledge acquisition, learning and thinking (Mussel *et al*., 2012: 109; Mussel, 2013: 454).

Investigation of the literature for a relationship between inquisitiveness and individuals demonstrating IIB, also revealed that although anecdotal evidence confirms that curiosity is one of the most natural characteristics of innovative individuals, there is far less empirical evidence that this is indeed the case (Karwowski, 2012: 547). Notwithstanding, a number of studies indicate that there is a good possibility that there is a connection between IIB and inquisitiveness. For example, Mussel (2013: 458) found that inquisitiveness shares aspects of the proactive personality (Crant, 2000, cited in Mussel, 2013: 458); and established a positive relationship between inquisitiveness and proactive coping (Seaton & Beaumont, 2008, cited in Mussel, 2013: 458), leading Mussel (2013: 458) to the conclusion that inquisitiveness might facilitate adapting to and proactively dealing with new situations. It was argued in the literature review that IIB is, among other, about dealing with newness (Baregheh *et al*., 2009: 1334; Janssen *et al*., 2004: 130) and that proactive behaviour is also associated with IIB (Bandura, 1989: 731; Bateman & Crant, 1993: 105; Unsworth & Parker, 2003: 5).

Lastly, Karwowski (2012: 554) empirically established a relationship between curiosity and "creative self-efficacy" (CSE). Karwowski defined CSE as: "… an individual's set of beliefs that she or he is able to solve problems requiring creative thinking". This resonates with the definition of Tierney and Farmer of CSE (2002: 1138), who defined CSE as employees' belief that they can be creative in their work roles.

The above arguments support the notion that the people who were successful in implementing their ideas were found to be inquisitive of nature, and also confirm the plausibility of a relationship between inquisitiveness and IIB.

6.7.2 Preparedness

It became evident through the data analysis that the participants who were successful in implementing their ideas, were well prepared when pitching or selling their ideas and also when testing and implementing their ideas. During the axial coding stage, the initial definition for "Preparation", was taken as: "The preparation a person did before selling/pitching and implementing the idea". The categories which were formed and linked to "Preparation" included the following:

(1) Confirmation that the person was well prepared;
(2) Instances where the person was not well prepared;
(3) Confirmation that being prepared led to self-confidence for implementing the idea;
(4) Planning the idea implementation was part of preparation; and
(5) Examples of actions that were taken as part of preparation.

The final theme was named "Preparedness", and the actual quotes providing evidence of the behavioural elements associated with "Preparedness" are provided in Table B2 in Appendix B, and Table 6.5 below provides a summary of the key elements featuring in the participants' narrative which supported the formulation of the relevant behaviours.

Table 6.5: Key elements of behaviours associated with Preparedness

Behaviour	Key elements
Preparation before selling, pitching or implementing the idea.	Do the "homework" before presenting an idea.
	Break down ideas into smaller steps.
	Provide evidence of a return on investment for an idea.
	Show the benefits of an idea.
	Proper presentation when pitching an idea.

Investigation of the literature for a relationship between preparedness and IIB revealed no prior research attempts to establish a link between being prepared and IIB. Nevertheless, Chen, Yao and Kotha (2009: 199) investigated the extent to which venture capitalists' (VCs') perceptions of "entrepreneurial passion" and the entrepreneur's preparedness when pitching the idea influence the VCs' investment decisions. After developing a measure of perceived passion and preparedness using an inductive, qualitative approach, Chen *et al.* (2009: 199) conducted a laboratory experiment and a field study that consistently showed that preparedness, not passion, positively impacted decisions of VCs to fund ventures.

Chen *et al.* (2009: 203) put forward that evidence for thorough preparation in refining a business idea (cognitive manifestation of the passion construct) is reflected in the quality of the business plan being presented to VCs. For example, matters that typically feature in the business plan are the entrepreneur's careful consideration of market needs, the product or service that can meet such needs, the market segments with the greatest potential for demand, competition from current or potential rivals, the expected financial return from pursuing the venture, and the difficulties the entrepreneur may encounter as the venture unfolds. Preparedness is also reflected in the way the entrepreneur tackles and responds to questions from the VCs at the end of the business plan presentation – i.e. whether the entrepreneur has well-thought-out answers and creative solutions for any concerns raised during the presentation.

It is plausible that similarities exist between an entrepreneur pitching an idea to VCs to obtain approval for funding and an employee pitching an idea to obtain approval for implementation, and consequently, based on the study of Chen *et al.* (2009), it is possible that preparedness plays a role in getting a useful idea implemented in an organisation.

Although Chen *et al.* (2009: 203) mentioned that entrepreneurs who were better prepared were able to provide well-thought-out answers and creative solutions to concerns raised, conversely, in the study of Chen *et al.* (2009) the focus was on how the VCs made their decisions (the dependent variable of their study was the investment decision of the VCs), meaning the study did not focus on how preparedness affected the entrepreneur pitching the idea. Thus, a connection between preparedness and S-E was not made in this study.

The researcher did not find any previous research which had investigated a possible association between Preparedness and S-E in the context of implementing useful ideas. However, preparedness has been theoretically linked to the development of S-E. Giallo and Little (2003: 21) assessed the development and maintenance of teacher S-E through investigating if the factors of preparedness and classroom experience may contribute to the development of confident teachers. Giallo and Little (2003: 24) built their case for preparedness on Housego (1990, cited in Giallo & Little, 2003: 24) who argued that for a teacher who felt ill-prepared to teach, their success in

maintaining an effective learning environment was compromised. Giallo and Little (2003: 24) acknowledged that Housego's assertion does not imply that a teacher's perceived preparedness denotes that they are prepared in reality, but they maintained that the feeling of being prepared is essential in the development of confidence in one's ability to execute a behaviour. The study of Giallo and Little (2003: 27) concluded that teachers who have a greater sense of perceived preparedness to teach, also tend to have a greater sense of S-E in behaviour management.

In summary, the analysis of the SCM interviews in Phase One revealed that being prepared also leads to the person being more self-assured that they can implement the idea successfully. S-E is defined as a personal judgment of "how well one can execute courses of action required to deal with prospective situations" (Bandura, 1982: 122) and therefore, based on the examples given above, it is argued that people who are more prepared for the implementation of their ideas, will have greater S-E that they can implement their ideas successfully. Therefore it is reasoned that Preparedness is related to S-E and has a positive influence on idea implementation.

6.7.3 Communication

The manifestation of the variable, "Communication", was the most prominent in the interviews and it was evident that communication played a significant role in many aspects of getting an idea implemented. This finding was self-evident, given the approach in this study of innovation happening in a social context within the organisation, as argued in Section 1.1.5.1 (Woodman *et al*., 1993: 294; Sawang & Unsworth, 2011: 1004; West & Farr, 1989: 15).

During the axial coding stage, the initial definition for the category where communication was related to idea implementation was expressed as: "Evidence that the participant utilised communication skills to aid implementation in any manner". With the axial coding stage, Communication was further broken down into the following eight categories of behavioural elements:

(1) Talking with other people (colleagues, customers, etc.) which leads to the generation of ideas;

(2) Sharing ideas with other people which leads to gaining other insights and perspectives to develop ideas;

(3) Soliciting support for ideas;

(4) Selling the benefits of ideas;

(5) Communication concerning the testing of ideas;

(6) Talking with people to drive the implementation of an idea;

(7) Communication as part of training users of the idea; and

(8) Talking with people to manage change caused by the implementation of the idea.

The actual quotes providing evidence of the behavioural elements associated with "Communication" are provided in Table B3 in Appendix B, and Table 6.6 below provides a summary of the key elements featuring in the participants' narrative which supported the formulation of the relevant behaviours.

Table 6.6: Key elements of behaviours associated with Communication

Behaviour	Key elements
(1) Talk with other people (colleagues, customers, etc.) which leads to generation of ideas.	Talk with different people across the organisation.
	Listen to customers.
(2) Share ideas and talk with other people – gain other insights and perspectives and develop ideas.	Talk with other people in the organisation about ideas. This will help to build an idea and is a source of other ways of doing something.
(3) Solicit support for ideas.	Explain the idea to people so that they understand it better and hence buy into an idea because of that.
	Do not force ideas on people.
(4) Selling benefits of ideas.	Explain how an idea will make a person's work easier.
	Sell the right benefits to the right people.
(5) Testing ideas.	Try something and then discuss the outcome and make adjustments or try something different.
(6) Talking with people to drive implementation.	Keep people involved and interested in a project or otherwise they lose interest.
	Keep people positive about implementation.
(7) Training users of the idea.	Explain and educate as much as possible about why an idea is being implemented.
	Explain and educate users about the purpose of an idea.
	Training other people also boosts confidence in the implementer.
(8) Talking with people to manage change caused by the implementation of the idea.	Try to explain and educate as far as possible why an idea is being implemented, why it is being done in a specific time frame, and what the purpose of the idea is.

It was beyond the scope of this study to do an in-depth review of the construct of communication; however, recognising that communication competence is multifaceted, researchers should develop conceptual definitions of the concept (Payne, 2005: 63). Many scholars have attempted to define interpersonal communication competence; however, the process is likened to "climbing a greased pole" and competence is still considered a "fuzzy" concept (Payne, 2005: 64). The lack of a widely accepted definition is due to the complexity of the communication process and problems with measurement (Payne, 2005: 64). Nevertheless, the context of communication competence was brought forward to some extent through the data analysis of Phase One and the most appropriate

definition found in the literature for this type of communication ability was “Interpersonal Communication Competence” (ICC). Rubin, Martin, Bruning and Powers (1993: 210) defined ICC as: “A person's ability to interact flexibly with others in a dyadic setting so that the communication is seen as appropriate and effective for the context”.

Investigation of the literature for a relationship between a person’s ability to communicate and IIB, led to a number of discoveries.

The link between communication and innovation has been studied extensively and some of these studies have focused on diverse matters such as group communication and organisational innovation (Monge *et al*., 1992); the intra-organisational aspects of communication as a determinant of innovation (Kivimäki, Länsisalmi, Elovainio, Heikkilä, Lindström *et al*., 2000); communication flows in international product innovation teams (Moenaert, Caeldries, Lievens & Wauters, 2000); the role of communication in innovation processes (Leeuwis & Aarts, 2011); and the effect of communication on technological innovation (Ebadi & Utterback, 1984).

The conclusions of some of these studies which investigated the relationship between innovation and communication resonated well with the findings of the qualitative stage of this study. For example, Fidler and Johnson (1984: 704) pointed out that the nature of information transmitted concerning an innovation can be grouped into three general categories, namely (1) information concerning the innovation; (2) influence and power information related to innovation; and (3) information concerning the operationalising of the innovation; and Kivimäki *et al.* (2000: 34) pointed out that communication related to innovation can be categorised into external and internal communication and also as between-person or between-group communication. Internal communication in this context (Kivimäki *et al.*, 2000: 34) may mean two kinds of interaction and collaboration, namely formal communicative activities between different levels of staff (i.e. meetings and reports), and informal communication where people work together, have a mutual understanding, share resources and achieve collective goals.

Table 6.7 below relates the above conclusions to the behavioural elements that were revealed through the qualitative analysis stage, indicating that the findings concerning communication are in line with the conclusions of previous research.

Table 6.7: Findings related to Communication

Behavioural element	**Information concerning the innovation** (Fidler & Johnson, 1984: 704).	**Influence and power information related to innovation** (Fidler & Johnson, 1984: 704).	**Information concerning the operationalising of the innovation** (Fidler & Johnson, 1984: 704).	**Formal communication** (Kivimäki *et al.*, 2000: 34).	**Informal communication** (Kivimäki *et al.*, 2000: 34).
(1) Talking with other people (colleagues, customers, etc.) which leads to the generation of ideas	X			X	X
(2) Sharing ideas with other people which leads to gaining other insights and perspectives to develop ideas	X	X			X
(3) Soliciting support for ideas	X			X	X
(4) Selling the benefits of ideas	X	X		X	X
(5) Communicatio n concerning the testing of ideas			X	X	X
(6) Talking with people to drive the implementatio n of an idea		X	X	X	X
(7) Communicatio n as part of training users of the idea			X	X	X

(8) Talking with people to manage change caused by the implementation of the idea		X	X	X	X

However, in spite of these similarities, previous research on the topic is not conclusive. Kivimäki *et al.* (2000: 34) revealed two shortcomings related to the studies which have investigated the link between innovation and communication. Firstly, they found that empirical studies that focused on the relationships between internal communication and innovation have rarely been published, and secondly, that potential third factors influencing the relationship between innovation and communication have usually not been controlled for. Leeuwis and Aarts (2011: 26) observed that previous studies investigating communication and innovation were mostly focused on the diffusion of "ready-made" innovations. Leeuwis and Aarts (2011: 26) further suggested that scholars rather need to think of this relationship in terms of a process that takes place in the context from conceiving the innovation through to implementation and diffusion. Most of these studies also appeared to rather focus on systemic matters relating to innovation and communication, and not so much on how communication related to the individual influences innovation.

Leeuwis and Aarts (2011: 26) also argued that researchers cannot usefully limit the perspective on the role of communication in innovation by focusing only on the contributions of professional change agents and intermediaries or the likes. In their view, innovation is eventually performed by interdependent "societal agents" (that is to say "ordinary employees") who interact with each other in numerous settings and networks. Such actors are likely to communicate much more with each other about change-related matters during everyday activities and events than during professionally staged meetings and interventions. This means that the informal everyday communicative interactions among stakeholders for getting ideas implemented (i.e. innovation) are equally if not more important than the communicative efforts of "professionals" through formal communication. In conjunction with this argument, Leeuwis and Aarts (2011: 25) also cautioned that communication is not something that necessarily brings people closer together or aids in problem solving, but it can add to incomprehension and the creation and reproduction of problems and conflicts.

The researcher is in agreement with the view of Leeuwis and Arts (2011: 26), namely that the relationship between communication and innovation must be studied in the context of people who interact with each other in numerous settings and networks in the organisation in a formal and informal manner. The reason for the researcher's view is that, in the context of this study, the focus was on how individuals take action on ideas in a social interactionist perspective of the

organisation, and also because the findings of this phase revealed that individuals utilised communication skills to aid implementation in a number of ways.

A number of studies were found which also investigated the relationship between S-E and communication (Rubin *et al.*, 1993; Nørgaard, Ammentorp, Ohm Kyvik & Kofoed, 2012; Tucker & McCarthy, 2001; Ammentorp, Sabroe, Kofoed & Mainz, 2007).

It seems that there is a positive relationship between S-E and communication skills. Rubin *et al.* (1993: 217) established that S-E expectations affected personal ratings of interpersonal communication competence; Nørgaard *et al*. (2012: 94) found that an improvement in the communication skills of health care professionals lead to an increase in the health care professionals' S-E and improved intercolonial and patient communication; Erozkan (2013: 739) learnt that communication skills are significantly correlated to social self-efficacy and also that communication skills are important predictors of social self-efficacy; and in a study by Morin and Latham (2000: 567) it was found that S-E correlates significantly with communication skills on the job.

The fact that there is a relationship between communication and innovation, and furthermore that there is also a relationship between communication and S-E, led the researcher to determine whether previous research had investigated all three constructs (communication, S-E, innovation) in the same study. No study was found where the constructs of S-E, innovation and communication had been explicitly investigated in the same study. However, based on the arguments made above, a relationship between communication skills and S-E and subsequently idea implementation seemed plausible.

6.7.4 Active listening

The data analysis also revealed that the participants who were successful in implementing their ideas, experienced that their managers were genuinely listening to what they were saying. Listening in this case is not viewed as only "hearing" what the other person is saying; instead, it implies that the person is actually making an effort to understand what is being said and giving the speaker a chance to explain themselves properly.

The initial definition for "Listening" during the axial coding process was taken as: "The person pays attention and tries to understand what the other person is saying. The person does not impose their own ideas, but gives the other person an opportunity to explain".

The final theme was named "Active listening", and the actual quotes providing evidence of the behavioural elements associated with "Active listening" are provided in Table B4 in Appendix B, and Table 6.8 below provides a summary of the key elements featuring in the participants' narrative which supported the formulation of the relevant behaviours.

Table 6.8: Key elements of behaviours associated with Active listening

Behaviour	Key elements
Thinking about the idea and trying to understand it.	Understand the idea to such an extent that a decision can be made to implement it or not.
Put own opinions aside and be prepared to give the speaker a chance to explain.	Be prepared to listen to what others have to say.
Understand the idea to such an extent that they can explain it to others.	Explain the idea to other people so that they can understand it as well.
Show empathy when listening.	Listen to such an extent that the speaker experiences it as emotional support.

Active listening – also sometimes referred to as "reflective listening" (Clawson, 2008: 1) or "empathic listening" (Nugent & Halvorson, 1995: 152) – was originally developed and refined by psychologist Carl Rogers for use in personal counselling (Clawson, 2008: 1). Active listening consists of two major components: First, seeking to understand the other person, and second, communicating or reflecting that understanding back to the speaker. The reflection is important because it reassures the speaker and the listener that what is being communicated is being understood. Without that link, neither the speaker nor the listener is really sure whether clear communication is taking place (Clawson, 2008: 1).

Other characteristics of active listening which resonate with the findings above are listed in Table 6.9.

Table 6.9: Characteristics of Active listening

Characteristic	Reference
Listening for "total meaning".	Robertson, 2005: 1053; Clawson, 2008: 1; Rogers & Farson, 1979: 171
Giving free and undivided attention to the speaker.	Robertson, 2005: 1053; Clawson, 2008: 1; Rogers & Farson, 1979: 171
Placing all one's attention and awareness at the disposal of another person.	Robertson, 2005: 1053; Clawson, 2008: 1; Rogers & Farson, 1979: 171
Listening with interest and appreciating without interrupting.	Robertson, 2005: 1053; Clawson, 2008: 1; Rogers & Farson, 1979: 171
Suspending judgement of the speaker.	Robertson, 2005: 1053; Clawson, 2008: 1; Rogers & Farson, 1979: 171
Reflecting accurately what is understood.	Robertson, 2005: 1053; Clawson, 2008: 1; Rogers & Farson, 1979: 171
Following, not leading the conversation.	Robertson, 2005: 1053; Clawson, 2008: 1; Rogers & Farson, 1979: 171
It requires attention to everything the other person is conveying, both verbally and nonverbally.	Robertson, 2005: 1053; Clawson, 2008: 1; Rogers & Farson, 1979: 171
Focusing on emotion as well as content.	Robertson, 2005: 1053; Clawson, 2008: 1; Rogers &

Characteristic	Reference
	Farson, 1979: 171
It requires the listener to empty themselves of personal concerns, distractions and preconceptions.	Robertson, 2005: 1053; Clawson, 2008: 1; Rogers & Farson, 1979: 171
The speaker must perceive that the other person is sincerely interested and concerned.	Robertson, 2005: 1053; Clawson, 2008: 1; Rogers & Farson, 1979: 171

Robertson (2005: 1053) also explained that the listener does not introduce their own views or solutions, they are far from passive. Instead they draw on high level skills in assisting the speaker to reflect: listening and exploring, understanding and relating, and focusing and assisting.

From the view of the speaker, through active listening the receiver (i.e. the person listening) is perceived as follows, as explained by Rogers and Farson (1979: 168): “I’m interested in you as a person, and I think that what you feel is important. I respect your thoughts, and even if I don’t agree with them, I know that they are valid for you. I feel sure that you have a contribution to make. I’m not trying to change or evaluate you. I just want to understand you. I think you’re worth listening to, and I want to know that I’m that kind of person you can talk to”.

The value of active listening for the speaker was explained in more detail by Rogers and Farson (1979: 168) who claimed that clinical and research evidence clearly shows that active listening is a most effective agent for individual personality change and group development. Rogers and Farson (1979: 168) proceeded to explain that listening brings about changes in people’s attitudes towards themselves and others; it also brings about changes in their basic values and personal philosophy. People who have been listened to in this way (active listening) become more emotionally mature, more open to their experiences, less defensive, more democratic and less authoritarian. Additionally, when people are being listened to in this manner, they tend to listen to themselves with more care and to make clear exactly what they are feeling and thinking. Group members tend to listen more to each other, to become less argumentative, more ready to incorporate other points of view. Lastly, and significant for this study, Rogers and Farson (1979: 168) also pointed out that because active listening reduces the threat of having one’s ideas criticised, the person is better able to see them for what they are and is more likely to feel that their contributions are worthwhile.

The influence and benefits of active listening have been studied in a variety of disciplines, including counselling (Levitt, 2002); nursing (Kacperck, 1997); education (McNaughton, Hamlin, McCarthy, Head-Reeves & Schreiner, 2008); social work (Nugent & Halvorson, 1995); and marketing and sales (Ramsey & Sohi, 1997).

The practice of active listening has also been investigated in relation to business in the context of management and leadership. As examples, Mineyama, Tsutsumi, Takao, Nishiuchi and Kawakami (2007: 81) established that supervisors’ listening attitude and skill have an effect on working

conditions and psychological stress reactions among subordinates; and Alvesson and Sveningsson (2003: 1446) concluded that listening is an important activity in leadership and has a significant influence on teamwork and the facilitation of decision making.

Bringing active listening into the context of this study – i.e. investigating the relationships between Active listening, POS and innovation – revealed that the only theme relating listening to innovation was innovation by listening carefully to customers (Flores, 1993; Johne, 1994); and that there are not many studies that specifically investigated active listening in relation to POS. Notwithstanding, Lloyd, Boer, Keller and Voelpel (2015) examined the outcomes of employee perceptions of supervisor listening on emotional exhaustion, turnover intentions and organisational citizenship behaviour (OCB) directed toward the organisation. The study of Lloyd *et al*. (2005: 510) was based on the main argument that employees may react emotionally to whether they believe the supervisor is effectively listening (or not) which, in turn, may distinctively affect work outcomes. The results of the study by Lloyd *et al.* (2015: 514) confirmed that perceived supervisor listening is positively related to employee OCB.

The study of Lloyd *et al. (*2015) is therefore meaningful for the variable, “Active listening”, since Lloyd *et al.* (2015: 512) include helping co-workers and offering ideas to improve the functioning of the organisation under OCB, and they argued that these are behaviours that are not critical to the task or job, but exceed core obligations and are performed as a result of “proactive initiative” that is beneficial for organisations. Podsakoff *et al.* (2000: 524) also referred to individual initiative as a form of citizenship behaviour and mentioned that such behaviour includes “voluntary acts of creativity and innovation designed to improve one's task or the organization's performance”. Proactive behaviour that brings forth benefits has also been associated with IIB (Bandura, 1989: 731; Bateman & Crant, 1993: 105; Unsworth & Parker, 2003: 5).

Furthermore, it was argued in Section 4.3 above that POS was found to be positively related to innovation, and in the absence of anticipated direct reward or personal recognition, Eisenberger *et al*. (1990: 57) ascribed this phenomenon to OCB.

Thus, based on the arguments above concerning the relationships between POS, OCB and innovation, it seems plausible that active listening can have an influence on idea implementation.

6.7.5 Managerial confidence

The data analysis also revealed that the participants who were successful in implementing their ideas perceived their managers to have confidence in them (and their capabilities) to be successful in implementing their ideas. The resulting category during the axial coding stage was termed “Belief in people” and the definition was given as: “The person’s manager believed that they could implement the idea”.

The final theme was named “Managerial confidence”, and the actual quotes providing evidence of the behavioural elements associated with “Managerial confidence” are provided in Table B5 in Appendix B, and Table 6.10 below provides a summary of the key elements featuring in the participants’ narrative which supported the formulation of the relevant behaviours.

Table 6.10: Key elements of behaviours associated with Managerial confidence

Behaviour	Key elements
Believing in a person’s capabilities in spite of the implementation being a major challenge involving risk.	Provide guidelines but allow a person to take ownership for implementation of an idea.
Displaying trust in the person by believing that they will be successful.	Verbally express faith that a person will be successful with implementation of an idea.
If the manager believes in a person, that person also believes in the other people who are involved in making the idea implementation a success. If the manager believes in a person, that person also believes in the manager (i.e. confidence works two ways).	Displaying confidence is reciprocal and infectious.

A concrete example of the effect of verbal persuasion in the context of innovation is evident from the study by Tierney and Farmer (2002: 1139), who hypothesised that supervisor support, through verbally expressing trust, confidence, and praise, to convince employees that they are capable of being creative, may be instrumental in shaping creativity-related efficacy beliefs. In addition to persuading, such actions may also elicit positive emotive reactions on the part of an employee also amenable to stronger efficacy views (Tierney & Farmer, 2002: 1139). The study of Tierney and Farmer (2002: 1145) found that employees apparently believe they have creative capability when they work with supervisors who build their confidence through verbal persuasion and serve as models for activities core to creative performance.

Another example of a study which investigated the relationship between expressing confidence in a person’s capabilities and idea implementation is that of Zhang and Bartol (2010: 109) who argued that the behaviours of empowering leadership are highly relevant to creativity, and they defined empowering leadership as: “…the process of implementing conditions that enable sharing power with an employee by delineating the significance of the employee’s job, providing greater decision-making autonomy, expressing confidence in the employee’s capabilities, and removing hindrances to performance process” (Zhang & Bartol, 2010: 109).

Zhang and Bartol (2010: 117) based their argument on the case that empowering leaders directly influences employee tendencies to engage in creative processes, because an empowering leader

tends to help a follower gain confidence, emphasises the importance of their work, and provides freedom to carry out the work. As a result, an employee may become more involved in their job by engaging in processes likely to lead to "creative outcomes". Zhang and Bartol (2010: 113) defined creative outcomes as: "…must engage in creative activities such as problem identification, environmental scanning, data gathering, unconscious mental activity, solution generation and evaluation, and solution implementation". This definition can be interpreted to include the implementation of a useful idea.

The study of Zhang and Bartol (2010: 107) concluded that empowering leadership positively affected "psychological empowerment", which in turn influenced both intrinsic motivation and creative process engagement. Hence, their study also confirmed a relationship between the behaviour of expressing confidence in the employee's capabilities (included in the behaviours of empowering leadership), which then ultimately has an influence on idea implementation as well (Zhang & Bartol, 2010: 107).

It therefore appears that a positive relationship exists between the behaviour of managers expressing confidence in the employee's capabilities and idea implementation (Tierney & Farmer, 2002: 1145; Zhang & Bartol, 2010: 107). However, there is a qualification on this claim, since neither Tierney and Farmer (2002) nor Zhang and Bartol (2010) took into consideration in their investigations that the strength of the persuasive words – which are supposed to build confidence – is dependent on the credibility of the persuader (Black, 2015: 80). Thus, it is possible that a person can express confidence, which is worthless – or has no influence on the receiver – because the person conveying the confidence does not have credibility.

In spite of the qualification of credibility, the influence of managerial confidence on idea implementation can also have a cumulative effect on idea implementation. Schaffer and Thomson (1992: 86) established that the implementation of "incremental projects" that quickly yield tangible results, demonstrate to employees their capacity to succeed, which provides the necessary "reinforcement", and also builds the employees' and management's confidence for "continued incremental improvements". Arguably, the opposite could also happen, meaning that failure to implement an idea can be detrimental to employee self-confidence as well as inhibit management confidence for future attempts at idea implementation.

In summary, an investigation of the literature to determine whether a manager's perceived confidence in an employee – i.e. expressing confidence that the employee will be capable of implementing a useful idea – positively influences the implementation of the idea, revealed two significant studies which support this relationship (Tierney & Farmer, 2002: 1145; Zhang & Bartol, 2010: 107). Therefore, it is reasoned that Managerial confidence is related to POS and has a positive influence on idea implementation.

6.7.6 Consultation

The data analysis furthermore revealed that the participants who were successful in implementing their ideas, regularly consulted with their managers regarding the implementation of their ideas. The purpose of these "consultations" was to share concerns, asks questions and get advice and guidance on decisions required for the implementation. During the axial coding stage the category was termed "Consultation" and the definition was given as: "Manager was available to consult with - i.e. provide advice and guidance".

The actual quotes providing evidence of the behavioural elements associated with "Consultation" are provided in Table B6 in Appendix B, and Table 6.11 below provides a summary of the key elements featuring in the participants' narrative which supported the formulation of the relevant behaviours.

Table 6.11: Key elements of behaviours associated with Consultation

Behaviour	Key elements
Be involved.	Show interest in implementation progress.
Ask questions.	Not afraid to ask questions.
Take people's opinions into consideration.	Ask people for their own opinions.
	Also consult with other team members.
Joint decision making.	Collaborate to find solutions to challenges.
Challenging the person to come up with a solution.	Do not instruct a person on how to implement an idea, rather challenge people to find their own solutions to challenges.
Providing guidance.	Promote regular conversations about implementation.

Concerning the behaviours associated with consultation or "consulting behaviour", the literature revealed the following findings, as described in Table 6.12 below.

Table 6.12: Findings in the literature related to Consultation

Finding theme	Description
Definition	Yukl, Wall and Lepsinger (1990, cited in Tangirala & Ramanujam, 2012: 252) defined the managerial behaviour "consultation" as the extent to which managers are perceived, by employees, as soliciting and listening to employees' suggestions or concerns on work-related issues.
Joint decision making	In a study on delegation and consultation, Yukl (1999: 220) explained that: "…consultation involves getting ideas and concerns from subordinates before making a decision that affects them". Yukl (1999: 220) also described it as "joint decision making" in which the manager and subordinate have equal influence on a decision. Yukl (1999: 220) listed the practices of "negotiation" and "joint problem solving" as part of consultation, and claimed that consultation provides an opportunity for subordinates to voice concerns about adverse consequences of a proposed change, which may reveal possibilities for a "mutually

Finding theme	Description
	acceptable compromise". The primary purpose of the study by Yukl (1999) was to investigate likely predictors of delegation and consultation. Yukl (1999: 230) found that managers used more consultation with a subordinate when there was a favourable exchange relationship and when the relationship comprised strong mutual trust.
Elements of consulting behaviour	Amabile *et al.* (2004) conducted an exploratory study to investigate leader behaviours and the work environment for creativity. For purposes of the study, Amabile *et al*. (2004: 13) defined a number of managerial practices as per the Managerial Practices Survey (MPS). Amabile *et al*. (2004: 13) defined "Consulting" as: "Checking with people before making changes that affect them, encouraging suggestions for improvement, inviting participation in decision making, and incorporating the ideas and suggestions of others in decisions".

It was apparent that the behaviours associated with consultation – or "consulting behaviour" – revealed in the literature, corresponded with the findings. Furthermore, literature also revealed that the behaviours of consultation, joint decision making and delegation are usually regarded as elements of "participative leadership" (Yukl, 1999: 220; De Jong & Den Hartog, 2007: 44).

Concerning the relationship between consultation and POS, Amabile *et al*. (2004: 18) found that consulting behaviour was significantly positively related to perceived leader support. Thus, it is plausible that consulting behaviour is part of POS.

As to the influence of consulting behaviour on idea implementation, it has been argued above in Section 4.4 that POS is related to innovative behaviour, and since consulting behaviour is regarded as an element of POS (Amabile *et al*., 2004: 18), the influence of consulting behaviour on idea implementation is plausible. The link between consulting behaviour and idea implementation has not been investigated empirically to date. However, Amabile *et al.* (2004: 26) established that consulting behaviour of leaders influences the "overall creativity" of the work that subordinates do, but the authors did not define "creativity" in the context of their study or indicate whether implementation is regarded as being part of creativity (Amabile *et al.*, 2004: 26). De Jong and Den Hartog (2007: 45) listed a number of studies which identified participative leadership as an antecedent of individual innovation (Judge *et al*., 1997, cited in De Jong & Den Hartog, 2007: 45; Axtell *et al*., 2000, cited in De Jong & Den Hartog, 2007: 45; Frischer, 1993, cited in De Jong & Den Hartog, 2007: 45). They also established that leaders' consulting behaviour is likely to impact employees' innovative behaviour, and they paid particular attention to both the generation of ideas and employees' "application behaviour", i.e. behaviours directed towards the implementation of ideas (De Jong & Den Hartog, 2007: 58).

Thus, based on the arguments above concerning the relationships between managers' consulting behaviour, POS and innovation, it is plausible that Consultation can have an influence on idea implementation.

6.7.7 Summary for variables of Phase One

To recap, Figure 6.3 below provides a graphical representation of the variables revealed through the qualitative analysis of Phase One and where these variables fit into the scope of the study, i.e. the main constructs with which these variables are associated.

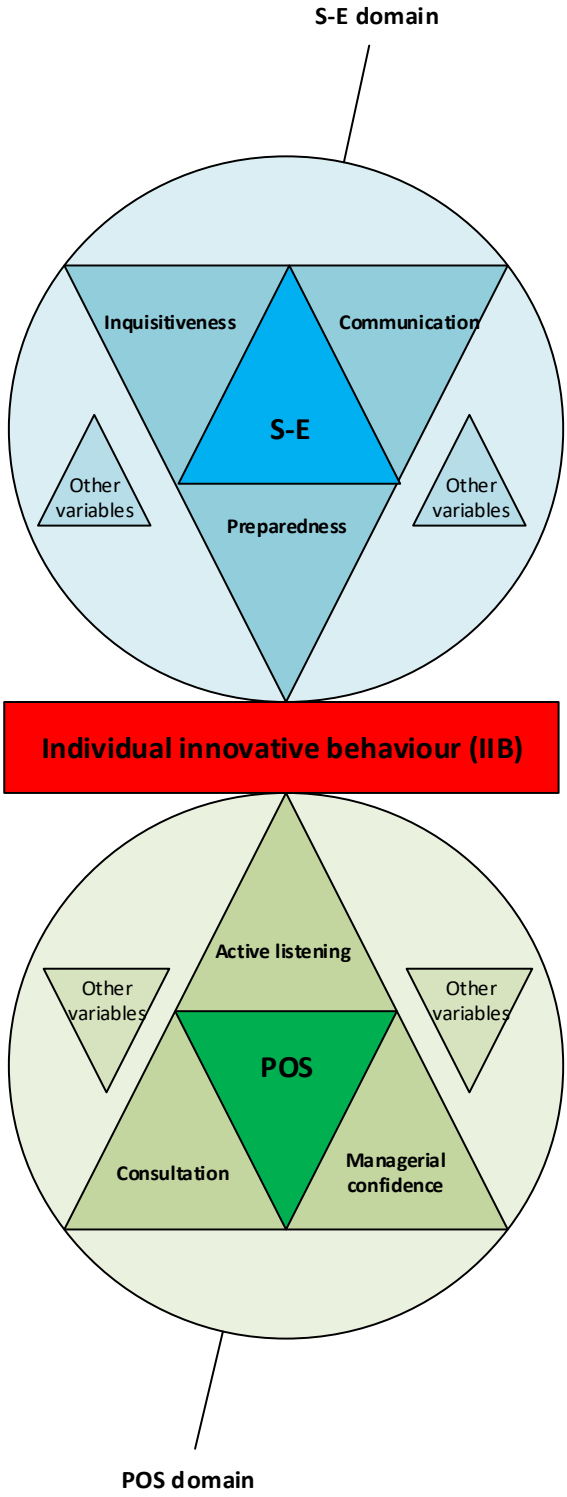

Figure 6.3: Selected variables related to S-E and POS

Thus, through the data collection and data analysis processes that were followed in Phase One, Objective 1 as listed in Section 1.3 was achieved, namely to identify and explore variables related to the constructs of S-E and POS in the context of idea implementation by employees in an organisation. The research design for Phase Two is discussed in the next chapter.

CHAPTER 7
PHASE TWO: INVESTIGATING THE RELATIONSHIPS BETWEEN THE VARIABLES

7.1 INTRODUCTION

The purpose of this phase was to quantitatively investigate the various relationships between the selected variables from Phase One, the constructs of S-E and POS, and the chance of successfully implementing an idea, as per the objectives set out in Section 1.3.

To recap, the variables that were ultimately selected for Phase Two of the study are shown below in Table 7.1. These variables were chosen firstly because the analysis of the data in Phase One revealed that these variables conceivably had an influence on idea implementation, and secondly because it would be possible to manipulate the manifestation of some of these variables. The variables which could be manipulated, made inferences about causality possible. Therefore, the chosen research method for Phase Two of the study was an experiment in which some of the variables were manipulated, whilst some of the variables were treated as constants. The variables that were treated as constants were also measured, but these variables were not manipulated for the purpose of the experiment.

Table 7.1: Selected variables for Phase Two

Main construct	Variable	Manipulate/Constant
S-E	Preparedness	Manipulate
	Communication	Constant
	Inquisitiveness	Constant
POS	Active listening	Manipulate
	Managerial confidence	Manipulate
	Consultation	Manipulate

It was disclosed through the data analyses in Phase One that the variables Communication and Inquisitiveness played a considerable role in idea implementation by employees in an organisation. A concern was raised in Section 6.6.4 about the possibility of manipulation of these two variables. After a review concerning how these variables feature in the innovation-related literature (refer to Section 6.7.3 for findings related to “Communication”; refer to Section 6.7.1 for findings related to “Inquisitiveness”), it was deemed too challenging to manipulate these variables, and so they were included as constants, meaning they were not manipulated as part of the experiment.

Regarding the variable “Communication”, Interpersonal Communication Competence (ICC) was defined by Rubin *et al*. (1993: 210) as: “A person's ability to interact flexibly with others in a dyadic setting so that the communication is seen as appropriate and effective for the context”. Since Communication is regarded as an ability, the level of communication proficiency of a person is not something that can be easily manipulated, meaning it will take a significant effort to increase a person’s proficiency, for example a training course (Nørgaard *et al*. (2012: 91). Such an effort was beyond the scope of this study and since reliable instruments exist for measuring communication competence (Bubas, 2001: 559; Rubin & Martin, 1994: 33), the decision was taken to treat the variable “Communication” as a constant and only investigate correlation with the dependent variable as opposed to causality.

The variable “Inquisitiveness” has mostly been studied as “curiosity” by researchers (Karwowski, 2012; Mussel, 2013; Mussel *et al*., 2012; Loewenstein, 1994). Curiosity is a fairly stable trait of a person (Mussel, 2013: 454) and similar to Communication, it would be challenging to increase a person’s level of curiosity without a significant intervention. Since an established measurement instrument also exists for curiosity (Mussel, 2013: 454), the decision was also taken to treat the variable “Inquisitiveness” as a constant and only investigate correlation with the dependent variable as opposed to causality.

In the rest of this chapter, the relevant elements of Phase Two are described, such as the treatment of the independent variables in the experiment, the formulated hypotheses, the sampling method, the data collection method, measurement methods, data analysis, ethical considerations, conducting a pilot study and experimental validity.

7.2 EXPERIMENT

An experiment is a method by which conditions are controlled in order for the researcher to be able to manipulate one or more of the variables for the purpose of testing a hypothesis (Zikmund, 2003: 257). In a typical experiment, one variable (the *independent variable*) is manipulated and its effect on another variable (the *dependent variable*) is measured, while all other variables that may confound such a relationship are eliminated or controlled. The experimenter either creates an artificial situation or deliberately manipulates a situation.

Experimental designs can be categorised into two groups, namely classical designs and statistical designs (Aaker *et al*., 2001: 337). Classic designs consider the impact of only one treatment level of an independent variable at a time. As illustrated in Figure 7.1, classical designs can be pre-experimental, true experimental and quasi-experimental designs. Statistical designs are somewhat different from classical designs in that they are used to examine the effects of different treatment levels of an experimental variable, and also the effects of two or more independent variables.

Statistical designs include completely randomised designs, randomised block designs, Latin square designs and factorial designs.

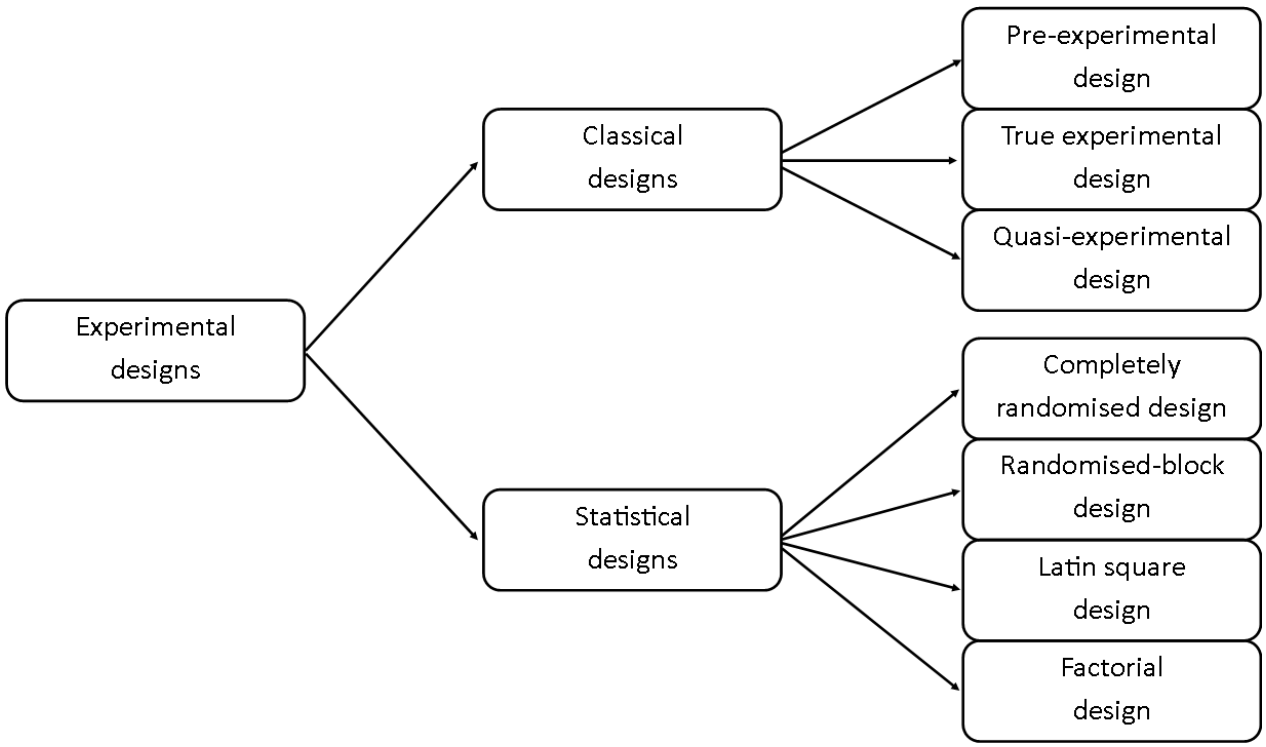

Figure 7.1: Classification of experimental designs

Source: Adapted from Aaker *et al.*, 2001: 338.

A factorial design contains two or more independent variables, called “factors”, and one dependent variable. In a factorial design, each level of a factor is paired with each level of another factor. As such, the design includes all combinations of the factors’ levels, and a unique subset of participants exists in each combination (Salkind, 2010: 475).

To put all the above information into context, Phase Two of this study was aimed at testing the influence of four independent variables identified in Phase One (Preparedness, Active listening, Managerial confidence, Consultation) on the chance of successfully implementing an idea (the dependent variable). This was achieved through manipulating the independent variables – by either having the variable present (high level) or not (low level) in a specific setting – and then investigating the impact on the dependent variable. Hence, with four variables each taking on two levels (high or low), it constituted a 2×2×2×2 factorial design and the factorial experiment therefore had 16 treatment combinations in total.

For this study there was more than one independent variable, and the influence of the different combinations of these variables on the dependent variable were also investigated.

The factorial experiment design was therefore particularly valuable to address the objectives of Phase Two of this study, for the following reasons: Firstly, the researcher could control the influence of the selected independent variables, allowing for inferences on causality between the independent and dependent variables. Secondly, factorial experiments make it possible to investigate the simultaneous effect of the factors operating together, and this study also had the aim to investigate the concurrent influence of individual-level variables and organisational-level variables on idea implementation.

There are many elements that play a role in the validity of an experiment, and the detail of how the experiment was constructed to address all these elements is disclosed in the next sections.

7.3 TREATMENT OF THE INDEPENDENT VARIABLES – EXPERIMENTAL VIGNETTE METHODOLOGY

The variables that are applicable to this study become relevant when an employee has an idea and is in a position to take action on the idea. To find and study a sufficient number of situations of this nature in a real organisational setting would be very challenging and would prolong this study indeterminately. There is also the risk that when people in an organisation know that they are being monitored for research, they might take different actions than what they would usually have done – e.g. because a person knows they are being evaluated on taking action on ideas, they might atypically proceed with implementation activities which they would not have done in “normal” circumstances. This is known as the “Hawthorne effect” by which researcher realise that subjects will perform differently when they know they are experimental subjects (Zikmund, 2003: 266).

The next best alternative to finding actual situations where a person is in a position to take action on an idea in an organisation, is to simulate such a situation. Therefore, the experimental vignette methodology (EVM) was selected as a way to create a replica of a situation where a person can take action on an idea, and treatment of the independent variables can be attained (Aguinis & Bradley, 2014: 351). Ganong and Coleman (2006: 467) pointed out that vignettes are an efficient way of studying how people think or might behave in situations that otherwise would be difficult or impossible to study in daily life, and further recommend that researchers should consider using the factorial vignette design method when variables of interest are hard to assess (such as decision making under specific circumstances), present ethical concerns, or present logistic difficulties because they rarely occur (Ganong & Coleman, 2006: 461).

The EVM studies consist of presenting participants with carefully constructed and realistic scenarios to assess dependent variables including intentions, attitudes, and behaviours (Aguinis & Bradley, 2014: 351; Spalding & Phillips, 2007: 954; Hughes, 1998: 281; Finch, 1987: 105). Thus, the EVM enhances experimental realism and allows researchers to manipulate and control

independent variables, thereby simultaneously enhancing both internal and external validity of an experiment (Aguinis & Bradley, 2014: 352).

In the rest of this section, the researcher provides a description of the EVM, discusses where the EVM has been applied in other research, reviews the criticism against the EVM, argues the motives of using the EVM for this study and sets out how the EVM was planned and operationalised for this study.

7.3.1 The use of the experimental vignette methodology in research

Aguinis and Bradley (2014: 355) conducted a review on the use of the EVM in management and related fields. Their review covered 30 influential management-related journals across major domains covering the period from 1994 through 2013. The review of Aguinis and Bradley (2014: 355) revealed 328 articles that used the EVM as well as that the paper people type of the EVM has been used more frequently than policy capturing and conjoint analysis, and that the majority of paper people studies were published in Organisational Behaviour and Human Resource Management (OB/HRM) journals. The total number of articles published in the 30 journals included in the review of Aguinis and Bradley (2014: 355) during the 20-year period is approximately 30,000. So, only about one percent of articles have used EVM during this period. This does not necessarily imply that the EVM is not a useful research technique. A number of authors have commented on the EVM being a valuable technique for exploring people's perceptions, beliefs, judgements and attitudes about specific situations (Hughes & Huby, 2004: 44; Spalding & Phillips, 2007: 954; Barter & Renold, 1999: 4; Schoenberg & Ravdal, 2000: 63; Finch, 1987: 110; Ganong & Coleman, 2006: 455; Atzmüller & Steiner, 2010: 128; Taylor, 2006: 1187).

Hughes and Huby (2004: 46) maintained that the use of the EVM transcends the wide-ranging subject disciplines within the social sciences and is invaluable in social research. Supporting this observation is the fact that the EVM has been utilised in a number of research domains, e.g. leadership (e.g. Benjamin & Flynn, 2006; De Cremer, Mayer, van Dijke, Schouten & Bardes, 2009; De Cremer & Van Knippenberg, 2004; Yun, Faraj & Sims, 2005, all cited in Aguinis & Bradley, 2014: 359), executive behaviours (e.g. Melone, 1994; Powell, 2001, all cited in Aguinis & Bradley, 2014: 359), entrepreneurship (e.g. Bucar, Glas & Hisrich, 2003, cited in Aguinis & Bradley, 2014: 359), organisational citizenship behaviour (e.g. Eastman, 1994; Podsakoff, Whiting, Podsakoff & Mishra, 2011, all cited in Aguinis & Bradley, 2014: 359), and ethics (e.g. Hoyt, Price & Poatsy, 2013, cited in Aguinis & Bradley, 2014: 359). These references also signify that the EVM is a widely accepted and established research technique.

7.3.2 Criticism against the experimental vignette methodology

Ludwick and Zeller (2001: 129) pointed out that the major criticism of vignettes is that judgments or decisions are only hypothetical. This viewpoint is also supported by other authors (Hughes & Huby,

2004: 40; Finch, 1987: 111; Lohrke, Holloway & Woolley 2010: 23). What a respondent says and then does when faced with a real event may differ significantly. They also stressed that a second problem with vignettes is validity (Ludwick & Zeller, 2001: 129), meaning, does the vignette represent the realities of the event it is portraying? If the vignette is not valid, it cannot be generalisable to real events.

Hughes and Huby (2004: 46) acknowledged that the debate surrounding the differences between the "real world and the vignette world", remain critically unresolved and continues. However, Hughes and Huby argued their point of view by quoting Thurman (1986: 452, cited in Hughes & Huby, 2004: 46) who maintained that the EVM offers an exceptional method with which to estimate what subjects intend to do in a particular situation and that it is important to note that no research method can truly reflect the reality of people's lives. The researcher supports this view as each application of a research method is only one way of understanding the complexity of the social world. As Denzin (1978: 292) pointed out: "…each method implies a different line of action toward reality – and hence each will reveal different aspects of it, much like a kaleidoscope, depending on the angle at which it is held, will reveal different colors and configurations of objects to the viewer. Methods are like the kaleidoscope: depending on how they are approached, held, and acted toward, different observations will be revealed. Each application of a research method is only one way of understanding the complexity of the social world". What Denzin imparted here is that decisions to use particular research methodologies, and vignettes in particular, are guided by the research questions being posed, research topics and participant groups, together with the other influences that inform research designs. Vignettes provide one worthwhile route to explore and expose those elements which innovation researchers seek to understand and learn more about.

Hence, one of the endearing features of vignettes is that they seem to declare themselves as fiction. Spalding and Phillips (2007: 961) highlighted this as a strength of vignettes by claiming that "…through their constructedness they can signal to the reader that they are a version, an interpretation. They do not seek to portray truth in the sense of verisimilitude to the world and events 'out there' but instead to provide a mediated account of that world and events". What Spalding and Phillips (2007: 961) meant by this is that the practical worth of vignettes is thus not as truths but as representations that can stimulate reflection and improve action, and that perhaps the questions to ask of a vignette are not "Is it true?" or "Does it provide an objective account?" but, rather, "Can I trust this?" and "Does it chime with my experience?". Thus, concerning innovation-related research, instead of looking at vignettes as hypothetical accounts, vignettes should rather be judged in terms of their contribution to improving practice.

Hughes and Huby (2004: 45) raised another concern over the lack of information provided in vignettes, which can provide an inadequate base for response. These concerns reflect the same criticism as discussed above, notably that vignettes are unable to fully capture the elements of

reality under study. However, Hughes and Huby (2004: 45) went on to rebut this criticism themselves by arguing that the selectivity of vignettes is one of the valuable features of the method. They maintained that vignettes cannot contain all the necessary information that participants may wish to draw on in responding to vignette events, because ultimately, vignette context is selective, but then again, the lack of information can help to clarify the principles and concepts under study.

7.3.3 Advantages of the experimental vignette methodology as research technique

The researcher chose the EVM because it is a method that can closely simulate real life experiences while preserving the validity of the scientific design. The advantages of using the EVM lies in its versatility and the researcher's ability to use it to test judgments in a variety of complex simulations (Ludwick & Zeller, 2001: 129). EVM designs also provide researchers with greater control of the contextual conditions under which the decisions are made (Ganong & Coleman, 2006: 467). This means that researchers can control the stimuli by randomly assigning people to different versions of a vignette in situations in which the real world does not offer such opportunities for variable control.

Atzmüller and Steiner (2010: 128) made a strong case for the advantages of using EVM studies. In their view, vignette studies combine ideas from classical experiments and survey methodology to counterbalance each approach's weakness. They explained: "….on the one hand, traditional surveys show a high external validity which is mainly due to their claim of representativeness and their multivariate and multivalent measurements. However, this goes along with a low internal validity caused by the multicollinearity of measured variables and the passive way of taking measurements (i.e., without any experimental intervention or control of explanatory variables). On the other hand, classical experimental designs derive their high internal validity from orthogonal design plans and an active mode of measurement enabled by the controlled intervention. But single experiments have the drawback of low external validity which is mainly due to their nonrepresentativeness and oversimplified setting. Vignette studies try to overcome these limitations by combining the traditional survey with a vignette experiment" (Atzmüller & Steiner, 2010: 128). The argument of Atzmüller and Steiner (2010: 128) is constructive because it stresses the difficult problem of internal and external validity in research. The issue of validity and how it was addressed in this study through the use of EVM is discussed below in Section 7.14.

As a final point, other advantages of EVM include ease and economy of administration, written vignettes are easy to replicate and administer in person (Ludwick & Zeller, 2001: 130), and in addition, participants seem to find vignettes engaging (Ganong & Coleman, 2006: 467).

The use of the EVM in research, the criticism against the EVM and the advantages of using the EVM have been covered. In the next section, the researcher explains how the EVM was planned and operationalised for this study.

7.3.4 Planning and executing the experimental vignette methodology study

Based on a comprehensive multidisciplinary literature review, Aguinis and Bradley (2014) offered best practice recommendations regarding the design and implementation of EVM studies. Aguinis and Bradley (2014: 356) recommended ten decision points associated with the planning, implementation, and reporting of results stages of EVM studies, as displayed in Figure 7.2 below.

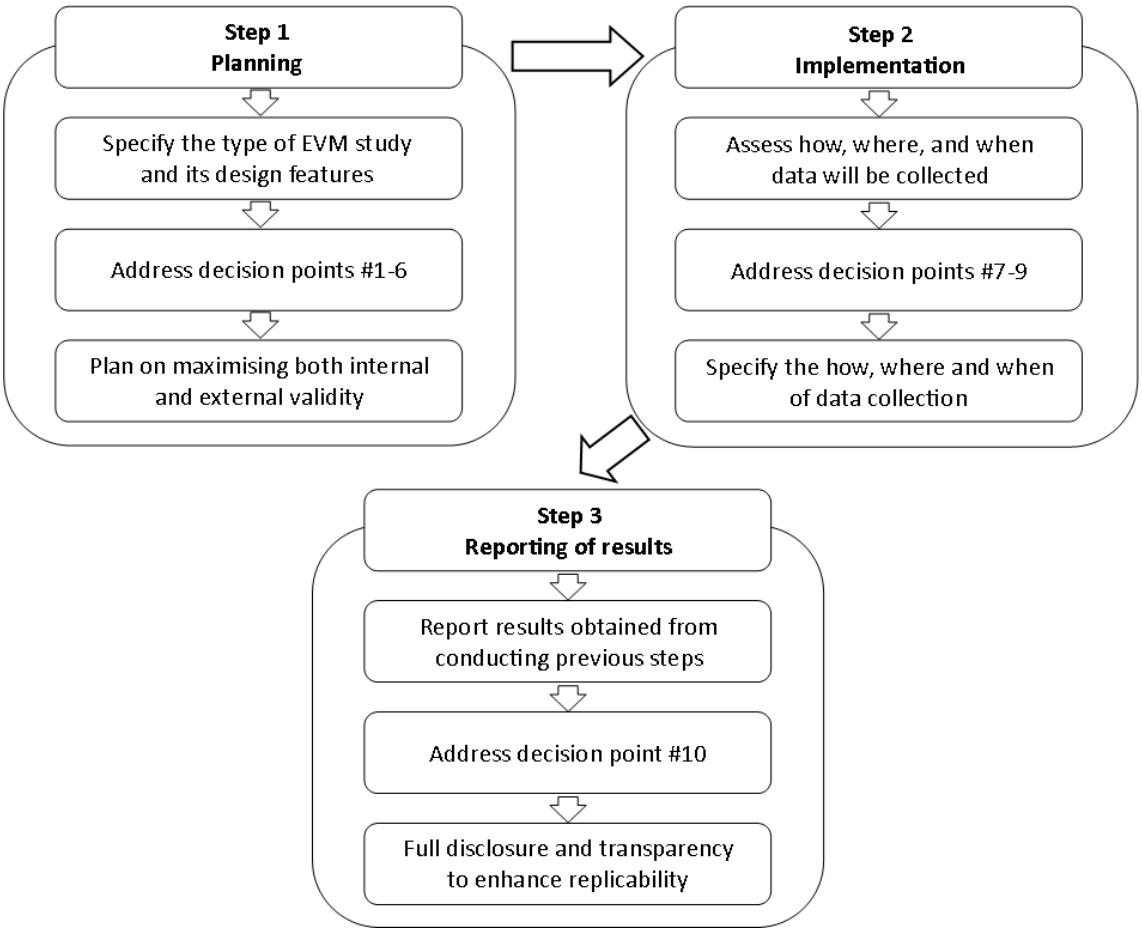

Figure 7.2: Summary of steps and decision points in conducting an experimental vignette methodology study

Source: Adapted from Aguinis & Bradley, 2014: 360.

The planning and implementation of the EVM for this study are described below on the basis of these decision points.

7.3.4.1 Decision Point 1: Deciding whether the EVM is a suitable approach

The case for using EVM for the purpose of this study has been argued above. To briefly repeat the reasons for using EVM: Firstly, the EVM is particularly useful when researchers need to exercise control of independent variables to gather evidence regarding causation (Cavanaugh & Fritzsche, 1985, cited in Aguinis & Bradley, 2014: 357). The EVM allows researchers to include factors that are relevant to the research question while excluding those that might confound the results. This amount of control helps to test causal hypotheses that would otherwise be difficult. Therefore, the EVM is particularly useful in research domains in which variables are known to correlate but there is a need to determine the nature and direction of causal relationships. Secondly, the EVM provides researchers with the ability to create hypothetical scenarios that address situations that are difficult to study in the real world.

7.3.4.2 Decision Point 2: Choosing the type of EVM

Aguinis and Bradley (2014: 354) pointed out that the EVM includes two major types: those assessing explicit processes and outcomes (“paper people” studies), and those assessing implicit processes and outcomes (“policy capturing and conjoint analysis”).

The EVM type assessing explicit processes and outcomes is called “paper people” studies (Aguinis & Bradley, 2014: 354; Hughes & Huby, 2004: 38). Paper people studies consist of presenting participants with vignettes typically in written form (and hence their name) and then asking the participants to make explicit decisions, judgments, and choices or express behavioural preferences (Aguinis & Bradley, 2014: 354). In contrast to paper people studies, in policy capturing and conjoint analysis studies, participants are asked to make decisions between scenarios in order to capture implicit processes. In other words, in policy capturing and conjoint analysis studies, the goal is to understand the effects of the manipulated variables on implicit judgments through ranking of vignettes or by asking participants to make choices and state preferences between them. Thus, the specific purpose of policy capturing and conjoint analysis is to assess participants’ choices, which are often not made openly, and with the participants’ full awareness (Aguinis & Bradley, 2014: 352).

For the purpose of this research, the paper people study was deemed most appropriate, because the researcher wanted to present participants with a specific scenario (with different treatments of the independent variables in the respective scenarios) involving an idea that could be implemented, and then to ask the participants to make an explicit judgment on the chance of implementing the idea. Paper people studies focus on explicit responses to hypothetical scenarios and have been used widely in a variety of research domains (Aguinis & Bradley, 2014: 359).

7.3.4.3 Decision Point 3: Choosing the type of research design

As with experimental designs, three general types of vignette experiments can be distinguished: within-subjects designs, mixed designs, and between-subjects designs. In within-subjects designs, each respondent judges exactly the same set of vignettes. In mixed designs, different groups of respondents get different vignette sets but within each group each respondent receives the same vignettes for judgment. In between-subjects designs, each respondent judges only one vignette (Atzmüller & Steiner, 2010: 129). This study comprised a between-subject design, since the purpose was to examine the differences between individuals, and each respondent judged only one vignette. Between-subjects effects determined whether respondents differ regarding the dependent variable, depending on their score for the particular independent variable.

7.3.4.4 Decision Point 4: Choosing the level of immersion

It was argued above that one of the major criticisms regarding the use of the EVM is that it is unrealistic and that EVM studies only show that certain outcomes can happen but not necessarily that they do happen outside of the experimental situation. The “level of immersion” which Aguinis and Bradley (2014: 361) referred to here is about improving the external validity of the EVM by enhancing the level of realism present in the stimulus presentation. Aguinis and Bradley (2014: 361) listed the possibility of using audio, video, pictures, and other presentation methods that increase the realism of EVM studies. Increasing the immersion of participants has the benefit of engaging participants to a greater extent, allowing them to remember and recall important information (Hughes & Huby, 2002: 383).

However, Aguinis and Bradley (2014: 361) also pointed out that the trade-off is that as vignette studies become more immersive, the cost associated with the experiment typically increases as well.

For the purpose of this study the researcher chose to present participants with a written vignette. Creating a written vignette usually requires no more than a researcher’s time and creativity, it is also economical and easy to administer in person.

Hughes and Huby (2004: 37) prescribed that the following aspects are of importance when considering the development and construction of vignettes: internal validity of the vignette, the appropriateness to the research topic, the kind of participants involved and the interest, relevance, realism and timing of the vignette in the research encounter. Each of these aspects – related to this study – are addressed in more detail next.

- Internal validity

The internal validity of vignettes refers to the extent to which vignette content captures the research topics under question (Hughes & Huby, 2004: 37). Internal validity has been explicitly

considered in the development and construction of vignettes, and criticism has been levelled at studies that fail to address internal validity (Hughes & Huby, 2004: 37). Gould (1996: 211) suggested that it is important to question things like: What attempts have been made to establish internal validity? More specifically, has the author drawn upon existing literature or case study material to develop each of the scenarios presented? Hughes (1998: 381) also pointed out that vignettes can be generated from a range of sources, including previous research findings, in collaboration with other professionals working in the field, or based on real-life case histories.

Concerning the development of the scenarios for this study, the researcher had the insights of the literature, the research findings of Phase One, and each of the SCM interviews which was essentially a case study of how a person successfully implemented an idea in the organisation. These were all expedient sources for the content of the scenario described in the vignette for this study.

- Research topics in question

The research topic will also influence the development and construction of the type of vignette used. Since this study was focused on idea implementation, the scenario in the vignette related to a person being in a position to take action on an idea.

- Nature of participant groups

It is important to match the type of vignette used to specific participant groups (Weisman & Brosgole, 1994, cited in Hughes & Huby, 2004: 39). Vignettes can take on many forms like video, pictures, sound, roleplay (Hughes & Huby, 2004: 38) and even virtual reality technology (Aguinis & Bradley, 2014: 361). The written vignette was deemed the most appropriate for the participant group of this study – individuals in the organisation who can take action on a useful idea.

- Interest, relevance, realism and timing

Generally vignettes are more likely to be effective when they engage participants' interest, are relevant to people's lives, and appear real (Hughes & Huby, 2004: 40). Correspondingly, Hughes and Huby (2004: 40) warned that if situations presented in vignettes appear hypothetical rather than realistic, responses may be answered in a similar, hypothetical fashion. This can be a challenge as realistic responses are required.

Ganong and Coleman (2006: 466) warned that there must not be so much information in the vignette that the dimensions of interest are lost. This suggests that care must be taken so that background information is not seen by participants as more relevant than the dimensions that the researcher wants to know about.

Ganong and Coleman (2006: 466) also cautioned that a potential concern of vignettes is that respondents can become overwhelmed or confused if there is too much detail included in the vignette.

Taking the advice of Ganong and Coleman (2006) and Hughes and Huby (2004) into consideration, for this study, where the participants were exposed to the vignette in their work environment, the vignette was kept short – a half page long with ample "white space" between paragraphs. The four reasons for this were to:

iv) save time during the data collection intervention;
v) ensure that participants were kept interested in order to maximise the response rate;
vi) ensure that participants did not become overwhelmed by the information in the vignette; and
vii) prevent vignette response fatigue (Hughes & Huby, 2004: 40).

Concerning realism, Spalding and Phillips (2007: 961) advised that a vignette should: "…offer an invitation to the reader to step into the space of vicarious experience, to assume a position in the world of the research…".

Hence, the opening scenario in the written vignette that was ultimately presented to the participants is displayed in Figure 7.3 below.

"There is a process in your work area which has been in place in the organisation for as long as you can remember. This process has a noteworthy impact on the outputs that your work area is responsible for. Something about the process has been bugging you for a while, because you have noticed some inefficiencies in the process. One day you come up with a useful idea on how to change this process, which will save your work area and the organisation some time and some money. After some preliminary investigation, you become aware that it will cost about N$ 200,000 to realise your idea.

Knowing that your organisation values innovation and expects employees to come up with useful ideas, and being excited about your idea and the possible benefits it might bring, you decide to discuss your idea with your manager".

Figure 7.3: Opening scenario presented in vignette

Clarification on a number of issues concerning the vignette scenario for this study are provided in Table 7.2 below.

Table 7.2: Clarifications for vignette scenario

Clarification theme	Description
Realism of scenario	This scenario was deemed realistic since there is a strong possibility that most people working in an organisation are exposed to routine work processes on a daily basis. There is further a good possibility that people frequently being exposed to certain processes may have noticed ways of improving the relevant process, or at least have an opinion on what about the relevant process frustrates them.
Applicability to a wide audience	The argument was made that every person has the ability to be creative and come up with ideas, and even more so if the person has acquired experience and expertise in the subject matter (Amabile, 1983: 361). Therefore, it is also realistically foreseeable that a person may have thought of ways to improve processes, or at least thought of how certain impediments in the processes could be removed.
Type of innovation	It was established in the literature review that innovation specifically includes new processes or process improvements (Baregheh *et al*., 2009: 1334). Likewise, process innovation is specifically defined as a type of innovation (Tidd, 2001: 177), and many definitions for innovation that were found in the literature specifically include process development and improvement as part of the definition (Popadiuk & Choo, 2006: 303; Ettlie & Reza, 1992: 795; Koberg *et al*., 2003: 23). An example of a process innovation therefore seemed fit for the purpose of the vignette scenario. It also seems more realistic for a person to have an idea and take action on a process improvement, as opposed to a radical innovation involving technology or one that requires large investment.
Change and benefit	It has also been argued that innovation involves change and must include some form of benefit (Janssen *et al*., 2004: 130). Thus, the elements of change and benefits also featured prominently in the scenario, and implementation was considered worthwhile, since it was specifically mentioned that it would save the organisation time and money.
Cost of innovation	The scenario confirmed that it would cost around N$200,000 to implement the improvements or changes to the process, signifying to the reader that some effort will have to be made to acquire the resources (money, technology, people with expertise) to implement the idea.
Culture of innovation	The scenario also pertinently referred to the fact that the organisation values innovation and expects employees to come up with useful ideas, creating the impression that a culture of innovation exists in the organisation.
Pilot study	A number of authors also advised on the importance of pilot studies before writing a vignette for research purposes (Hughes & Huby, 2004: 38; Finch, 1987: 109; Ganong & Coleman, 2006: 466; Ludwick & Zeller, 2001: 131). The researcher conducted a pilot study in the organisation that was ultimately selected for data collection. In total, 12 people across various departments in the organisation (Information Technology, Credit, Branch Operations, Sales, Risk and Administration) were targeted for a pilot study. The participants in the pilot study were questioned on a number of matters regarding the questionnaire, including the relevance and realism of the vignette scenario. All 12 participants confirmed that the scenario described in the vignette was realistic in the context of the organisation and in their work environments, that it was interesting, that it was not difficult to read and that it did not take too long to read the scenario and complete the questionnaire.

Taking all of the above into consideration, the final confirmation of the realism and relevance of the vignette scenario came during the actual data collection process. A number of participants came to the researcher after the data collection intervention to state that they had found the questionnaire interesting and that the scenario was "spot on" and that they had actually encountered such a situation in their work environment. One participant even commented that she had encountered such a situation during the week and said that "even the amount was the same!".

Lastly, Ludwick and Zeller (2001: 130) advised that it is important to write a coherent vignette, and that the arrangement of the variables in a vignette must be coherent and logical. Thus, for the presentation of the independent variables in the vignette, the sequence of how the independent variables (in the various forms of the treatments) were presented was significant for how realistic the participants would experience the vignette. The independent variables and their different levels of treatment are discussed in Section 7.3.5 below, where the sequence of representation of the variables is also clarified.

7.3.4.5 Decision Point 5: Specifying the number and levels of the manipulated factors

The experiment entailed a factorial design since there were four independent variables (factors). Each of the factors had two levels (i.e. the different treatments), high and low, and therefore the factorial experiment could be denoted as a 2 x 2 x 2 x 2 factorial design. Table 7.3 below displays all the different combinations of the factors' levels for the different experiments. A "0" denotes a low level for a factor, and a "1" denotes a high level for a factor.

Table 7.3: Treatment combinations for the independent variables

Exp #	P	AL	MC	C
1	0	0	0	0
2	0	0	0	1
3	0	0	1	0
4	0	0	1	1
5	0	1	0	0
6	0	1	0	1
7	0	1	1	0
8	0	1	1	1
9	1	0	0	0
10	1	0	0	1
11	1	0	1	0
12	1	0	1	1
13	1	1	0	0
14	1	1	0	1
15	1	1	1	0
16	1	1	1	1

The detail of the high and low levels of the factors are discussed below in Section 7.3.5.

7.3.4.6 Decision Point 6: Choosing the number of vignettes

This comprised providing for all the different combinations of the factors' levels (i.e. the variables' treatment combinations), denoted as a 2 x 2 x 2 x 2 factorial design, and translated into a total of 16 different vignettes, i.e. 16 different experiments had to be conducted.

7.3.4.7 Decision Point 7: Specifying the sample and number of participants

The sampling method, sample size and random assignment of the treatments are essential matters for running an experiment, and are discussed in detail in Section 7.9 below.

7.3.4.8 Decision Point 8: Choosing the setting and timing for administration

An experiment can be conducted in a natural setting – called a field experiment; or in an artificial setting, i.e. one contrived for a specific purpose – called a laboratory experiment (Zikmund, 2003: 270). As experiments increase in naturalism, they begin to approach the pure field experiment, and as experiments become more artificial, they approach the laboratory type, as depicted in Figure 7.4.

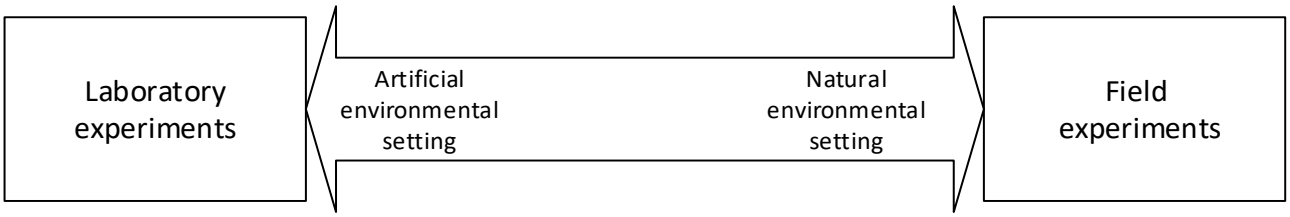

Figure 7.4: Artificiality of laboratory versus field experiments

Source: Zikmund, 2003: 271.

The degree of artificiality in experiments refers to the amount of manipulation and control of the situation that the experimenter creates to ensure that the subjects are exposed to the exact conditions the experimenter desires. In a field experiment, the researcher manipulates some of the variables, but is not able to control all the extraneous variables (Zikmund, 2003: 271).

The participants for this EVM study were selected from one large organisation (1 300 employees) in the financial services industry, located in Namibia. The researcher set up meetings with the different departments in the organisation to engage the participants. Zikmund (2003: 271) pointed out that generally subjects know when they are participating in a laboratory experiment, and it is common practice to brief subjects of a laboratory experiment to explain the purpose of the research. Hence, the researcher briefed the participants on the study before data collection commenced. The researcher made sure to inform the participants of anonymity, explained that

they would be given a scenario to read, and also assured them that there were no wrong or right answers, and that they had to answer the questions truthfully (Hughes & Huby, 2004: 45).

Since the researcher engaged the participants for the study in their work environment, all the meetings with them were scheduled to take place during the first 30 minutes of official working hours, hence usually between 07h30 and 08h00 in the morning. Participants were then briefed by the researcher – most of the time in a location where departmental meetings were typically held, such as a boardroom or a common meeting area – and participants were asked to complete the questionnaire at the meeting venue before returning to their work stations. This proved to be an effective manner in which to collect the data, since most of the departments were keen to participate during this timeslot, and the participants were engaged before they became involved with their work, meaning they could focus their undivided attention on the questionnaire.

Based on the manner in which the experiment was conducted, i.e. a simulated scenario (through the vignette) with controlled manipulation of the variables, briefing the participants before the experiment, and having them participate in a pre-arranged venue and time-slot, it is clear that this experiment could be classified as a laboratory experiment.

7.3.4.9 Decision Point 9: Choosing the best method for analysing the data

The analysis of the data is discussed in more detail in Section 7.16.

To summarise, for the data collection phase the researcher used the EVM. The EVM entailed that the participants were presented with a simulated scenario where an idea could be implemented and they were then asked to make a judgement on the chance of successfully implementing the idea, i.e. the dependent variable. The scenario that was provided comprised different treatments of the factors which were hypothesised to influence the chance of successfully implementing the idea, i.e. the independent variables.

The researcher acknowledges that the decision-making process modelled with this technique cannot be guaranteed to apply to what might happen in real life. However, given the arguments on the criticism against EVM and the advantages of EVM which were discussed, and weighing these up against each other, the researcher is of the opinion that besides studying actual situations like this in reality – which was reasoned to be very unlikely and impractical – the EVM method is arguably the most appropriate technique to study the phenomena under investigation.

The method for the treatment of the variables has been reviewed, and the dependent variable and independent variables are discussed in more detail in the following sections.

7.3.5 Independent variables

The independent variables selected in Phase One to be included in the factorial experiment were: Preparedness (related to the construct of S-E), and Active listening, Managerial confidence and Consultation (related to the construct of POS).

The explanations and definitions of these variables have already been discussed in detail in Section 6.7 and in this section only the treatment of the variables is explained.

Each of these factors had two treatment levels, a high level (variable being conspicuously present) and a low level (variable being conspicuously absent). The respective variables are discussed in more detail below, and all the different vignettes depicting the different treatment combinations of the variables (as per Table 7.3 above) are provided in Appendix C.

7.3.5.1 Preparedness

It was revealed through Phase One that participants who were successful in implementing their ideas, had been well prepared to pitch their ideas, sell the benefits of their ideas and drive their ideas' implementation (Section 6.7.2). Being prepared also led to the participant being more self-confident that they could implement the idea successfully. S-E is defined as a personal judgment of "how well one can execute courses of action required to deal with prospective situations" (Bandura, 1982: 122), and therefore it was argued that people who are more prepared for the implementation of their ideas, will have greater S-E that they can implement their ideas successfully. Therefore, it is reasoned that Preparedness is related to S-E and has a positive influence on idea implementation.

Concerning the treatment of the variable, "Preparedness", Table 7.4 below displays the narrative for the high and low levels of the variable as it was portrayed in the vignettes.

Table 7.4: High and low levels for Preparedness

Preparedness: High level	Preparedness: Low level
Your manager agrees to hear you out, and gives you a week's time to prepare for your discussion. This gives you ample time to prepare for your discussion with your manager to explain your idea to them.	Your manager agrees to hear you out, and asks you to come see them immediately. This leaves you with little time to prepare for your discussion with your manager to explain your idea to them.

It is clear from the vignette text depicting the high and the low levels of the variable, that there is a considerable difference in the time the person will have to prepare for pitching and explaining the idea to the manager. Therefore, it is reasoned that a person who knows there is "ample time" to properly prepare and think through all the different aspects of implementing the idea, will be more confident that the idea could be implemented successfully. They would therefore rate the possibility

of succeeding at implementing the idea more favourably. Alternatively, it is reasoned that a person who has “little time” to prepare and think through all the different aspects of implementing the idea, will be less confident that the idea could be implemented successfully. They would therefore rate the possibility of succeeding at implementing the idea less favourably.

7.3.5.2 Active listening

It was revealed through Phase One that participants who were successful at implementing their ideas experienced that their managers were paying attention to them when they were discussing and explaining their ideas, i.e. they were engaged in what was defined in Section 6.7.4 as “Active listening”. Concerning the treatment of the variable, “Active listening”, Table 7.5 below displays the narrative for the high and low levels of the variable as it was portrayed in the vignettes.

Table 7.5: High and low levels for Active listening

Active listening: High level	Active listening: Low level
When meeting with your manager to discuss your idea, your manager switches off their computer/mobile phone and actively and attentively pays attention to you while you are explaining your idea to them. They ask you a couple of detailed questions to clarify some matters, and nod their head a couple of times to indicate understanding.	When meeting with your manager to discuss your idea, your manager looks very busy and while you are explaining your idea to them, they glance at their computer screen a couple of times, look at their mobile phone a couple of times to answer a text message, and stare out the window occasionally.

It is clear from the vignette text depicting the high and the low levels of the variable, that there is a considerable difference in how the manager listens to the person when explaining the idea to them. Therefore, it is reasoned that a person who experiences the manager as taking action to listen properly (switching off computer and phone) and actively paying attention (asking questions, nodding head), will be more assured of the support of the manager and consequently that the idea could be implemented successfully. They would therefore rate the possibility of succeeding at implementing the idea more favourably. Alternatively, it is reasoned that a person who experiences the manager as not really taking an interest to listen properly and actively paying attention, will be less confident that the idea could be implemented successfully. They would therefore rate the possibility of succeeding at implementing the idea less favourably.

7.3.5.3 Managerial confidence

It was revealed through Phase One that participants who were successful at implementing their ideas perceived their managers to have genuine confidence in them and their capabilities of successfully implementing their ideas. This was defined in Section 6.7.5 as “Managerial confidence”. Concerning the treatment of the variable, “Managerial confidence”, Table 7.6 below displays the narrative for the high and low levels of the variable as it was portrayed in the vignettes.

Table 7.6: High and low levels for Managerial confidence

Managerial confidence: High level	Managerial confidence: Low level
After discussing your idea with your manager, they reply that they have total confidence in you that you will be able to implement your idea successfully, based on your abilities and experience.	After discussing your idea with your manager, they reply that they doubt whether you would be able to implement your idea successfully, based on your abilities and experience.

It is clear from the vignette text depicting the high and the low levels of the variable, that there is a considerable difference in how the manager portrays confidence in the person's ability to implement the idea successfully. Therefore, it is reasoned that a person who experiences the manager as having confidence ("total confidence") in the person's ability to implement the idea successfully, will be more confident of own ability and of the support of the manager. They would therefore rate the possibility of succeeding at implementing the idea more favourably. Alternatively, it is reasoned that a person who experiences the manager as having no confidence ("really doubts") in the persons' ability to implement the idea successfully, will be less confident of own ability and of the support of the manager. They would therefore rate the possibility of succeeding at implementing the idea less favourably.

7.3.5.4 Consultation

It was revealed through Phase One that the availability of a manager during the implementation stage for advice and guidance with challenges experienced during implementation, had a positive influence on the successful implementation of an idea. This was defined in Section 6.7.6 as "Consultation". Concerning the treatment of the variable, "Consultation", Table 7.7 below displays the narrative for the high and low levels of the variable as it was given in the vignettes:

Table 7.7: High and low levels for Consultation

Consultation: High level	Consultation: Low level
You then decide to first test your idea, but as you start to put things in place, you run into a couple of unexpected issues. You decide to take it up with your manager. Your manager gives you sound advice on all the issues you have mentioned, asks a couple of helpful questions and provides general direction on how to implement your idea.	You then decide to first test your idea, but as you start to put things in place, you run into a couple of unexpected issues. You decide to take it up with your manager. Your manager does not seem to care too much about the issues you mention and urges you to sort it out on your own and tells you to "go make a plan".

It is clear from the vignette text depicting the high and the low levels of the variable, that there is a considerable difference in how the manager is available for consultation concerning the implementation of the idea. Therefore, it is reasoned that a person who experiences the manager as being available for consultation ("…gives you sound advice on all the issues you have

mentioned, asks a couple of helpful questions and provides general direction on how to implement your idea"), will be more assured of the support of the manager and consequently that the idea could be implemented successfully. They would therefore rate the possibility of succeeding at implementing the idea more favourably. Alternatively, it is reasoned that a person who experiences the manager as being unavailable for consultation ("…does not seem to care too much about the issues you mention and urges you to sort it out on your own"), will be less assured of the support of the manager and consequently that the idea could be implemented successfully. They would therefore rate the possibility of succeeding at implementing the idea less favourably.

7.4 DEPENDENT VARIABLE – CHANCE OF SUCCESSFULLY IMPLEMENTING AN IDEA

The purpose of this study was to investigate the influence of S-E and POS on idea implementation by employees in an organisation. Idea implementation was mostly operationalised in the literature (see Section 2.4.3) as the process of converting ideas into new or improved products, processes, or ways of doing things (e.g. Kanter, 1988; West, 2002; Woodman *et al*., 1993, cited in Baer, 2012: 1102).

The dependent variable for this study is thus taken as implementation of an idea has taken place. What actually constitutes successful implementation has been reviewed in Section 2.4.3 above and the conclusion was made that implementation success is multidimensional and many of its aspects are not generalisable to all innovations and that there are various indicators of implementation success in the existing literature. However, no consensus exists on the definition or measurement of implementation success (Linton, 2002: 67).

As a result of no consensus existing on the definition or measurement of implementation, there are not many studies available in the literature which provide guidance on this matter. Most studies on innovation do not measure implementation success in itself, but rather assess "innovativeness" at the organisational level using archival objective data such as number of patents, number of new products launched or Research and Development (R & D) intensity (Anderson *et al*., 2014: 1317; Rubera & Kirca, 2012: 137).

Similarly, at the individual level, measurements were typically aimed at "innovativeness" and not at implementation success in itself. Measurements of "innovativeness" at the individual level were mostly achieved through the use of self-report measures and independent or observer ratings, such as supervisory ratings, peer ratings and expert ratings (Anderson *et al*., 2014: 1317; Somech & Drach-Zahavy, 2013: 695).

As a result of this perplexity concerning measuring implementation success, the researcher used the following studies as guidelines for measuring if implementation had taken place, as described in Table 7.8 below.

Table 7.8: Measurement of implementation

Reference	Theme	Description
Axtell *et al*., 2000: 267	Confidence to perform a specific task.	Axtell *et al*. (2000: 267) argued that when employees feel confident to perform a range of proactive tasks which require the use of their initiative, they are more likely to be successful at performing those tasks. Axtell *et al.* (2000: 272) used a seven-item scale designed to measure individual confidence in performing broader and more proactive activities that extend beyond prescribed technical requirements of the job itself, and included questions like: "How confident would you feel designing new procedures for your work area?". Axtell *et al.* (2000: 272) also maintained that this is a particularly appropriate measure to use, due to its general applicability to a range of proactive tasks that employees might undertake.
Gerber *et al.*, 2012: 1	Confidence to perform a specific task.	Gerber *et al.* (2012: 1) view innovation self-efficacy (ISE) as an individual's belief in their ability to accomplish tasks necessary for innovating and – in their efforts to develop and validate a survey measure for ISE – their pilot survey asked participants to rate their degree of confidence in their ability to do certain tasks (Gerber *et al*., 2012: 2). This approach of Gerber *et al*. (2012: 2) is in line with the approach of Axtell *et al*. (2000: 272), and also supports the argument that when individuals feel confident to perform a task which requires the use of their initiative, they are more likely to be successful at performing those tasks.
Baer, 2012: 1109	Idea has been approved for further development.	Baer (2012: 1109) measured implementation by assessing if the idea has been approved for further development. Baer (2012: 1109) argued that if an idea is approved for further development, it significantly increases the chances of getting resources and consequently the chances of implementation success. Baer (2012: 1109) requested supervisors to rate the frequency with which employees' ideas had reached certain stages of approval and compared it to the extent to which the ideas had eventually been successfully implemented. The measure provided evidence of convergent validity, and this indicator by employees of implementation significantly and positively correlated with the measure of implementation provided by supervisors (r = 0,26, p < 0,01), with the size of the correlation being comparable to those in previous research (Baer 2012: 1109).
Klein & Sorra, 1996: 1055	Use of the innovation.	According to Klein and Sorra (1996: 1055), innovation implementation has occurred if targeted organisational members "appropriately and committedly" use the innovation. The "test" for successful implementation by Klein and Sorra (1996: 1055) was only theoretical, as they did not include an actual measurement for implementation in their study. Their explanation of successful implementation (Klein & Sorra, 1996: 1055) is also aligned with the view of Linton (2002: 69), who listed a measure of success of the implementation process as "routinisation", meaning that the implementation process is over and that the outcome is acceptable to the organisation.

It was argued above that it would be impractical to find and study a sufficient number of instances in real organisational settings where a person is in the position of having a useful idea to be implemented. It was further reasoned above that the next best alternative to finding actual situations where a person is in a position to take action on an idea in an organisation, is to simulate such a situation. Likewise, the next best thing to measuring actual implementation, is to measure the probability that the implementation of the idea will succeed, from the point of the view of the potential implementer. Therefore, the measurement of the dependent variable (chance of successfully implementing an idea) was based on the examples above of what constitutes implementation and how it has been measured in the relevant studies, i.e. confidence in ability to design new procedures for the organisation (Axtell *et al*., 2000: 272; Gerber *et al*., 2012: 2), probability of the idea being approved for further development (Baer, 2012: 1109), probability of appropriate and committed use of the innovation (Klein & Sorra, 1996: 1055), and the person's view of the probability that they will be able to successfully implement the idea.

The semantic differential scale that was eventually used to operationalise and measure the dependent variable is shown below in Figure 7.5.

How confident would you feel designing this new procedure for the work area:

DV1	Not confident at all	1	2	3	4	5	Very confident

How would you rate the chance of your idea being approved for future development:

DV2	Will not be approved	1	2	3	4	5	Will be approved

How would you rate the chance that affected employees will use the new process:

DV3	Employees will never use it	1	2	3	4	5	Employees will always use it

How would you rate the chance that affected employees will use the new process appropriately:

DV4	Will not use it appropriately	1	2	3	4	5	Will use it appropriately

Rate your degree of confidence to implement your idea:

DV5	Not confident at all	1	2	3	4	5	Very confident

Rate the chance out of a hundred that your idea will succeed:

DV6	0-20	21-40	41-60	61-80	81-100

Figure 7.5: Measurement instrument for the dependent variable

The reliability of the measurement instrument as assessed by Cronbach's Alpha is discussed in Section 8.2.2 below.

7.5 COMMUNICATION AND INQUISITIVENESS

As explained above, the variables Communication and Inquisitiveness were also measured, but these variables were not manipulated. The measurement of these variables is discussed in more detail in Section 7.13 below.

7.6 CONTROL VARIABLES

According to Ibarra (1993), both personal sources of power, such as education and experience (Ibarra, 1993: 474), and structural sources, such as subunit membership and formal rank (Ibarra, 1993: 475), affect the process of bringing new ideas into use. Following this model and accounting for the possibility that any observed effects may be partially attributable to these variables, the following demographic variables were also included as control variables:

- Age;
- Gender;
- Experience (how long the person has been working in the organisation);
- Department;
- Level of Education (Up to Grade 12/Matric, Graduate qualification and Postgraduate qualification); and
- Job grade.

These variables were recorded as demographic questions in the questionnaire, as displayed in Figure 7.6 below.

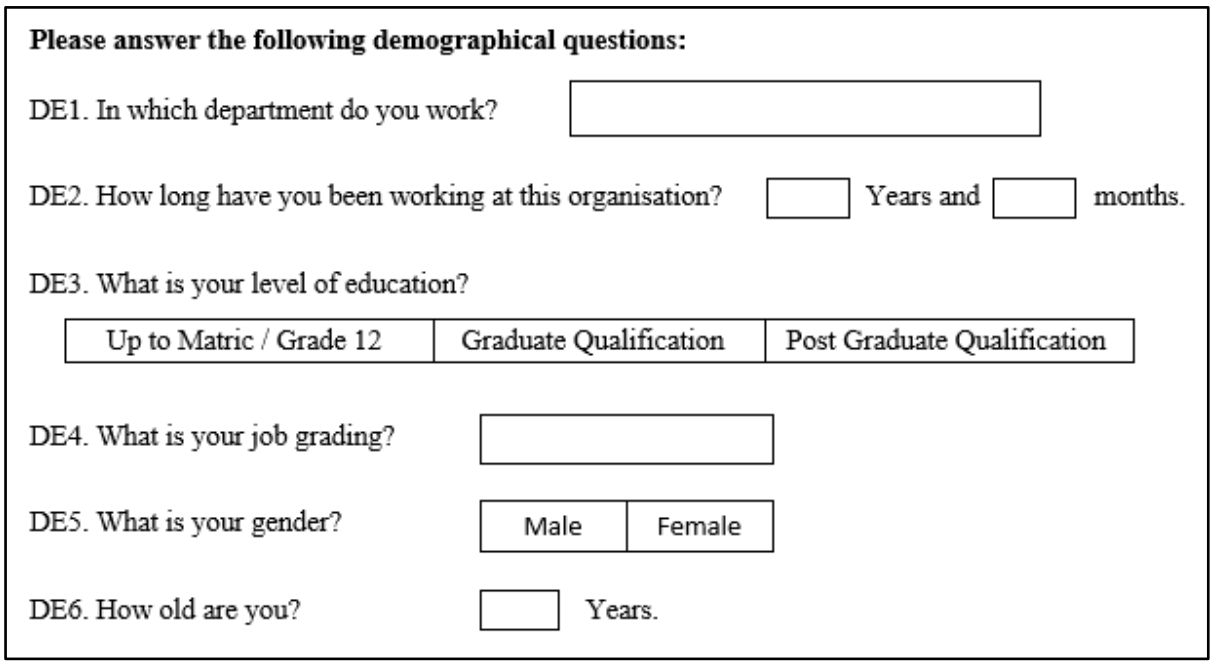

Figure 7.6: Questions for capturing control variables

7.7 SEQUENCE OF THE VARIABLES

It was reasoned above that in general, vignettes are more likely to be effective when they engage participants' interest, are relevant to people's lives (and work), and appear real (Hughes & Huby, 2004: 40). Thus, the sequence in which the variables were presented in the vignette also had to make sense and appear realistic to the participants.

Hence, the timeline of the vignette had to be considered in detail, to make sure that it appeared probable to the participants. Ultimately the sequence of the vignette was drawn up as follows:

i) The person becomes aware of some inefficiencies or issues with an existing and well-known process.

ii) Then the person conceptualises the idea of how to resolve the issue and the potential benefits it holds, and does some preliminary investigation on implementation.

iii) Then the person proceeds to discuss the idea with the manager.

iv) During this discussion, the matter of active listening features, i.e. the manager actively listens to the person while explaining the idea, or does not listen when the person is explaining the idea.

v) After the discussion, the matter of confidence is addressed, i.e. the manager makes the statement of having confidence – or not having confidence – in the person and their abilities to successfully implement the idea.

vi) The person then starts with some preliminary action to implement the idea but runs into unexpected issues.

vii) Finally, the person decides to consult with the manager on the issues that surfaced, and the manager is available for consultation – or is not available for consultation.

The researcher went through different variations of the sequence of events in the vignette, to determine whether it makes sense, and ultimately came up with the above sequence. For example, the impression cannot be given that testing of the idea has begun, and only then the matter of giving the participant enough time to prepare for pitching and explaining the idea to the manager becomes relevant; or the manager cannot express confidence (or the lack thereof) before listening to the person.

7.8 HYPOTHESES

Six variables were discovered in Phase One which were associated with idea implementation and also with the main constructs, POS and S-E. Four of these variables (Preparedness, Active listening, Managerial confidence and Consultation) were manipulated as part of a factorial experiment, i.e. the independent variables. The participants' responses to the respective

combinations of manipulations of the independent variables were then measured with the dependent variable, “Chance of successfully implementing idea” (COSII). All these measurements were collected with the use of a questionnaire.

The other two variables that were identified in Phase One, Communication and Inquisitiveness, were not manipulated for the sake of the experiment. These two variables were regarded as constants and were also measured with data collected through the questionnaire.

The questionnaire was also applied to measure the participants’ assessments of the main constructs, S-E and POS. S-E and POS were not manipulated for the purpose of the experiment, i.e. they were taken as stable constructs.

Consequently, four sets of hypotheses were formulated based on all these variables and their respective measurements, in order to meet the objectives of this study as listed in Section 1.3:

i) *Hypotheses related to the relationship between selected variables and the main constructs.*

   These hypotheses were formulated to meet Objective 2 as listed in Section 1.3, and were based on the expected relationships between the constants, Communication and Inquisitiveness, and the main construct with which these two variables were associated during the qualitative phase, namely S-E.

ii) *Hypotheses related to the relationship between the main constructs, S-E and POS, and the chance of successfully implementing an idea.*

   These hypotheses were formulated to meet Objective 3 as listed in Section 1.3, and were based on the expected relationships between the main constructs, S-E and POS, and the dependent variable, COSII.

iii) *Hypotheses related to the relationships between the constants, Communication and Inquisitiveness, and the chance of successfully implementing an idea.*

   These hypotheses were formulated to meet Objective 4 as listed in Section 1.3, and were based on the expected relationships between Communication and Inquisitiveness and the dependent variable, COSII.

iv) *Hypotheses related to the factorial experiment.*

   These hypotheses were also formulated to meet Objective 4 as listed in Section 1.3, and were based on the expected relationships between the independent variables of the factorial experiment (Preparation, Active listening, Managerial confidence and Consultation) and the dependent variable, COSII.

The four sets of hypotheses are listed in the sub-sections below. The number given to each of the relevant hypotheses reflects the objective (as listed in Section 1.3) with which it is associated. As an example, the number O2H1 refers to hypothesis one (H1) which is associated with Objective 2 (O2).

7.8.1 Hypotheses for the relationships between Communication, Inquisitiveness and S-E

The hypotheses in this section deal with Objective 2 as listed in Section 1.3: to investigate the relationships between the variables identified in Phase One and the constructs of S-E and POS.

The data analysis in Phase One revealed that people who successfully implemented their ideas utilised communication skills copiously to aid implementation; and were also regarded as being generally curious in nature. Since these traits are internal to the individual and not from an external influence (as described in Section 6.6), these variables were associated with S-E for the purpose of this study.

A comparison of the findings of Phase One with the literature revealed that both Communication and Inquisitiveness were indeed positively associated with S-E and both variables were also positively associated with innovation.

Subsequently, the questionnaire also measured the participants' assessment of their general communication ability and their general level of curiosity through two variables named "Communication" and "Inquisitiveness". These variables were not manipulated as part of the factorial experiment. Hence, the different experimental treatments were not supposed to influence the participants' evaluation of these variables.

Table 7.9 below lists the research hypotheses and the statistical hypotheses which were formed based on the expected relationships between these variables and S-E.

Table 7.9: Hypotheses for the expected relationships between Communication, Inquisitiveness and S-E

No.	Code	Variable	Relationship	Research hypothesis	Statistical null and alternative hypotheses
O2H1	$H_{(Com - SE)}$	Communication (Com)	S-E	People with a high rating of Communication (ComHigh) are more likely to have a high rating of S-E than people with a low rating of Communication (ComLow).	H_0^{O2H1}: μComHigh = μComLow H_a^{O2H1}: μComHigh ≠ μComLow

No.	Code	Variable	Relationship	Research hypothesis	Statistical null and alternative hypotheses
O2H2	$H_{(Inq - S\text{-}E)}$	Inquisitiveness (Inq)	S-E	People with a high rating of Inquisitiveness (InqHigh) are more likely to have a high rating of S-E than people with a low rating of Inquisitiveness (InqLow).	H_0^{O2H2}: μInqHigh = μInqLow H_a^{O2H2}: μInqHigh ≠ μInqLow

Figure 7.7 below graphically depicts the hypotheses applicable to the expected relationships between the variables, Communication, Inquisitiveness and S-E.

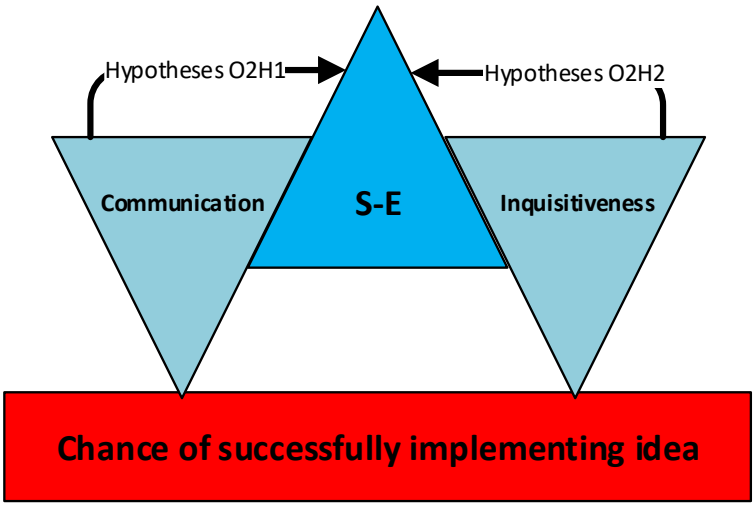

Figure 7.7: Hypotheses for Communication, Inquisitiveness and S-E

In order to reject or accept the formulated hypotheses, the data was collected and analysed using the appropriate statistical techniques. The collection of the data, measurement, and analysis procedures are described in more detail in subsequent sections.

7.8.2 Hypotheses for the relationships between S-E, POS and COSII

The hypotheses in this section deal with Objective 3 as listed in Section 1.3: to investigate the relationships between S-E and POS and the chance of successfully implementing an idea.

The main premise of this study was that S-E and POS are key constructs in innovation in the context of IIB. Thus, it is to be expected that these constructs will have a positive association with the chance of successfully implementing an idea, resulting in the research hypotheses and

statistical hypotheses displayed in Table 7.10 below. These constructs were also not manipulated as part of the factorial experiment; it comprised of a generalised measurement of a stable construct related to the participant (S-E) and the organisation (POS). Hence, the different experimental treatments were not supposed to influence participant's evaluation of these variables.

Table 7.10: Hypotheses for the expected relationships between S-E, POS and COSII

No.	Code	Variable	Relationship	Research hypothesis	Statistical hypotheses
O3H1	$H_{(S\text{-}E - COSII)}$	S-E	Dependent variable – Chance of successfully implementing an idea (COSII)	People with a high rating of S-E (S-EHigh) are more likely to have a high rating of the chance of successfully implementing an idea than people with a low rating of S-E (S-ELow).	H_0^{O3H1}: μS-EHigh = μS-ELow H_a^{O3H1}: μS-EHigh ≠ μS-ELow
O3H2	$H_{(POS - COSII)}$	POS	Dependent variable – Chance of successfully implementing an idea (COSII)	People with a high rating of POS (POSHigh) are more likely to have a high rating of the chance of successfully implementing an idea, than people with a low rating of POS (POSLow).	H_0^{O3H2}: μPOSHigh = μPOSLow H_a^{O3H2}: μPOSHigh ≠ μPOSLow

Figure 7.8 below graphically depicts the hypotheses applicable to the expected relationships between S-E, POS and COSII.

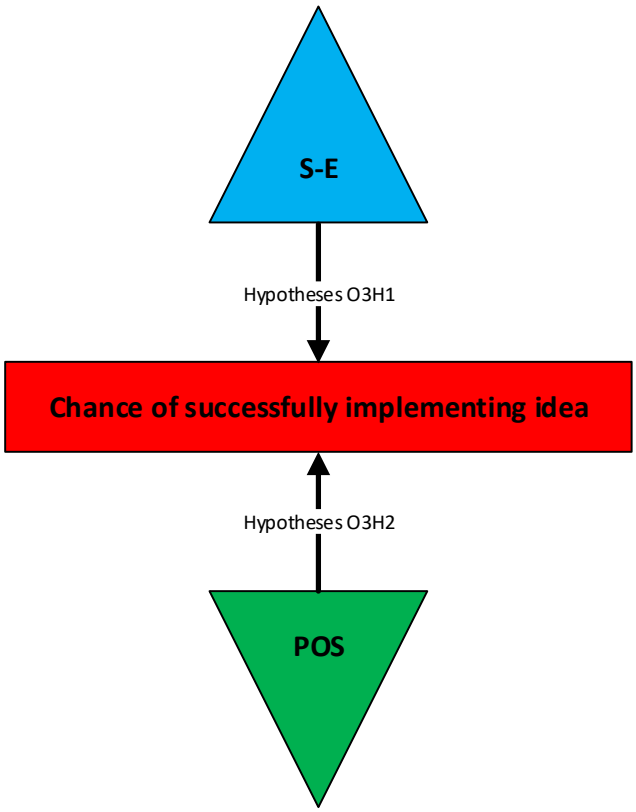

Figure 7.8: Hypotheses for S-E, POS and COSII

In order to reject or accept the formulated hypotheses, the data was collected and analysed using the appropriate statistical techniques. The collection of the data, measurement, and analysis procedures are described in more detail in subsequent sections.

7.8.3 Hypotheses for the relationships between Communication, Inquisitiveness and COSII

The hypotheses in this section deal with Objective 4 as listed in Section 1.3: to investigate the relationships between the variables identified in Phase One and the chance of successfully implementing an idea.

The data analysis in the qualitative phase revealed that people who successfully implemented their ideas utilised communication skills copiously to aid implementation; and were also regarded as being generally curious in nature.

Thus, it was expected that the variables which were formulated based on these behaviours, Communication and Inquisitiveness, would have a positive association with the chance of successfully implementing an idea, resulting in the research hypotheses and statistical hypotheses displayed in Table 7.11 below. These variables were also not manipulated as part of the factorial experiment because they were regarded as constants in this study.

Table 7.11 Hypotheses for the expected relationships between Communication, Inquisitiveness and COSII

No.	Code	Variable	Relationship	Research hypothesis	Statistical null and alternative hypotheses
O4H1	$H_{(Com - COSII)}$	Communication (Com)	Dependent variable	People with a high rating of Communication (ComHigh) are more likely to have a high rating of the chance of successfully implementing an idea than people with a low rating of Communication (ComLow).	H_0^{O4H1}: μComHigh = μComLow H_a^{O4H1}: μComHigh ≠ μComLow
O4H2	$H_{(Inq - COSII)}$	Inquisitiveness (Inq)	Dependent variable	People with a high rating of Inquisitiveness (InqHigh) are more likely to have a high rating of the chance of successfully implementing an idea than people with a low rating of Inquisitiveness (InqLow).	H_0^{O4H2}: μInqHigh = μInqLow H_a^{O4H2}: μInqHigh ≠ μInqLow

Figure 7.9 below graphically depicts the hypotheses applicable to the expected relationships between Communication, Inquisitiveness and COSII.

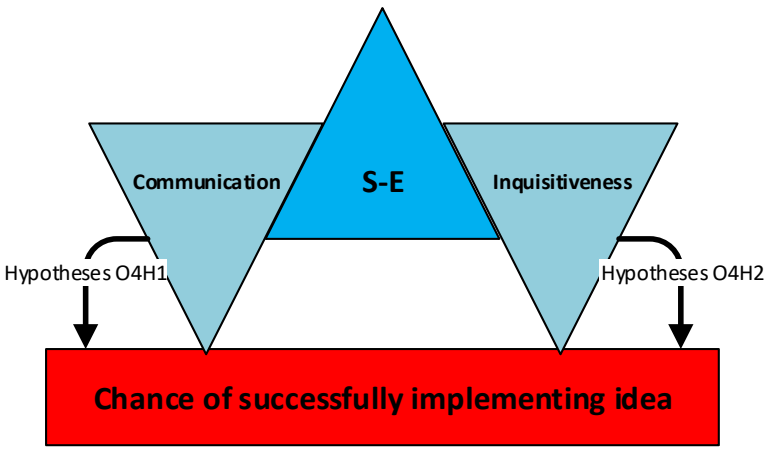

Figure 7.9: Hypotheses for Communication, Inquisitiveness and COSII

In order to reject or accept the formulated hypotheses, the data was collected and analysed using the appropriate statistical techniques. The collection of the data, measurement, and analysis procedures are described in more detail in subsequent sections.

7.8.4 Hypotheses for the factorial experiment

The hypotheses in this section deal with Objective 4 as listed in Section 1.3: to investigate the relationships between the variables identified in Phase One and the chance of successfully implementing an idea.

The objectives of this study were to investigate how S-E and POS and associated variables influence idea implementation by employees in a business organisation. A qualitative study was conducted in Phase One and six variables (factors) related to S-E and POS were identified. Four of these variables were then selected to be investigated in a quantitative study using a factorial experiment, namely Preparation, Active listening, Managerial confidence and Consultation. For the factorial experiment, the direct impact of the four selected variables on the chance of successfully implementing an idea was investigated. Thus, based on the objectives of this study and the selected variables, the research hypothesis for the factorial experiment is that the implementation of ideas in a business organisation is influenced by these variables.

This study was designed as a 2 x 2 x 2 x 2 multilevel factorial experiment to investigate the influence of the four independent variables (Preparation, Active listening, Managerial confidence and Consultation) on the dependent variable, Chance of successfully implementing idea, COSII. The treatment of the variables was operationalised as being present (high value) or not being present (low value) and the combination of treatments has been clarified in Table 7.3 in Section 7.3.4.5 above. The unit of analysis comprised individuals working in a business organisation. Based on the research hypotheses and the selected variables, the following statistical null hypotheses, as listed in Table 7.12, were formulated for the factorial experiment.

Table 7.12: Null hypotheses for the factorial experiment

No.	Code	Independent variables	Effect	Null hypothesis
O4H3	$H_{0(P)}$	Preparedness (P)	Main P	Preparedness does not have a significant effect on the chance of successfully implementing an idea.
O4H4	$H_{0(AL)}$	Active listening (AL)	Main AL	Active listening does not have a significant effect on the chance of successfully implementing an idea.
O4H5	$H_{0(MC)}$	Managerial confidence (MC)	Main MC	Managerial confidence does not have a significant effect on the chance of successfully implementing an idea.
O4H6	$H_{0(C)}$	Consultation (C)	Main C	Consultation does not have a significant effect on the chance of successfully implementing an idea.

No.	Code	Independent variables	Effect	Null hypothesis
O4H7	$H_{0(P\text{-}AL)}$	Preparedness (P) Active listening (AL)	2-way Interaction P*AL	There is no significant effect of the 2-way interaction between Preparedness and Active listening on the chance of successfully implementing an idea.
O4H8	$H_{0(P\text{-}MC)}$	Preparedness (P) Managerial confidence (MC)	2-way Interaction P*MC	There is no significant effect of the 2-way interaction between Preparedness and Managerial confidence on the chance of successfully implementing an idea.
O4H9	$H_{0(P\text{-}C)}$	Preparedness (P) Consultation (C)	2-way Interaction P*C	There is no significant effect of the 2-way interaction between Preparedness and Consultation on the chance of successfully implementing an idea.
O4H10	$H_{0(AL\text{-}MC)}$	Active listening (AL) Managerial confidence (MC)	2-way Interaction AL*MC	There is no significant effect of the 2-way interaction between Active listening and Managerial confidence on the chance of successfully implementing an idea.
O4H11	$H_{0(AL\text{-}C)}$	Active listening (AL) Consultation (C)	2-way Interaction AL*C	There is no significant effect of the 2-way interaction between Active listening and Consultation on the chance of successfully implementing an idea.
O4H12	$H_{0(MC\text{-}C)}$	Managerial confidence (MC) Consultation (C)	2-way Interaction MC*C	There is no significant effect of the 2-way interaction between Managerial confidence and Consultation on the chance of successfully implementing an idea.
O4H13	$H_{0(P\text{-}AL\text{-}MC)}$	Preparedness Active listening (AL) Managerial confidence (MC)	3-way Interaction P*AL*MC	There is no significant effect of the 3-way interaction between Preparedness, Active listening, and Managerial confidence on the chance of successfully implementing an idea.
O4H14	$H_{0(P\text{-}AL\text{-}C)}$	Preparedness (P) Active listening (AL) Consultation (C)	3-way Interaction P*AL*C	There is no significant effect of the 3-way interaction between Preparedness, Active listening, and Consultation on the chance of successfully implementing an idea.
O4H15	$H_{0(P\text{-}MC\text{-}C)}$	Preparedness (P) Managerial confidence (MC) Consultation (C)	3-way Interaction P*MC*C	There is no significant effect of the 3-way interaction between Preparedness, Managerial confidence, and Consultation on the chance of successfully implementing an idea.
O4H16	$H_{0(AL\text{-}MC\text{-}C)}$	Active listening (AL) Managerial confidence (MC) Consultation (C)	3-way Interaction AL*MC*C	There is no significant effect of the 3-way interaction between Active listening, Managerial confidence, and Consultation on the chance of successfully implementing an idea.
O4H17	$H_{0(P\text{-}AL\text{-}MC\text{-}C)}$	Preparedness (P) Active listening (AL) Managerial confidence (MC) Consultation (C)	4-way Interaction P*AL*MC*C	There is no significant effect of the 4-way interaction between Preparedness, Active listening, Managerial confidence, and Consultation on the chance of successfully implementing an idea.

Figure 7.10 below graphically depicts the variables which were included in the factorial experiment.

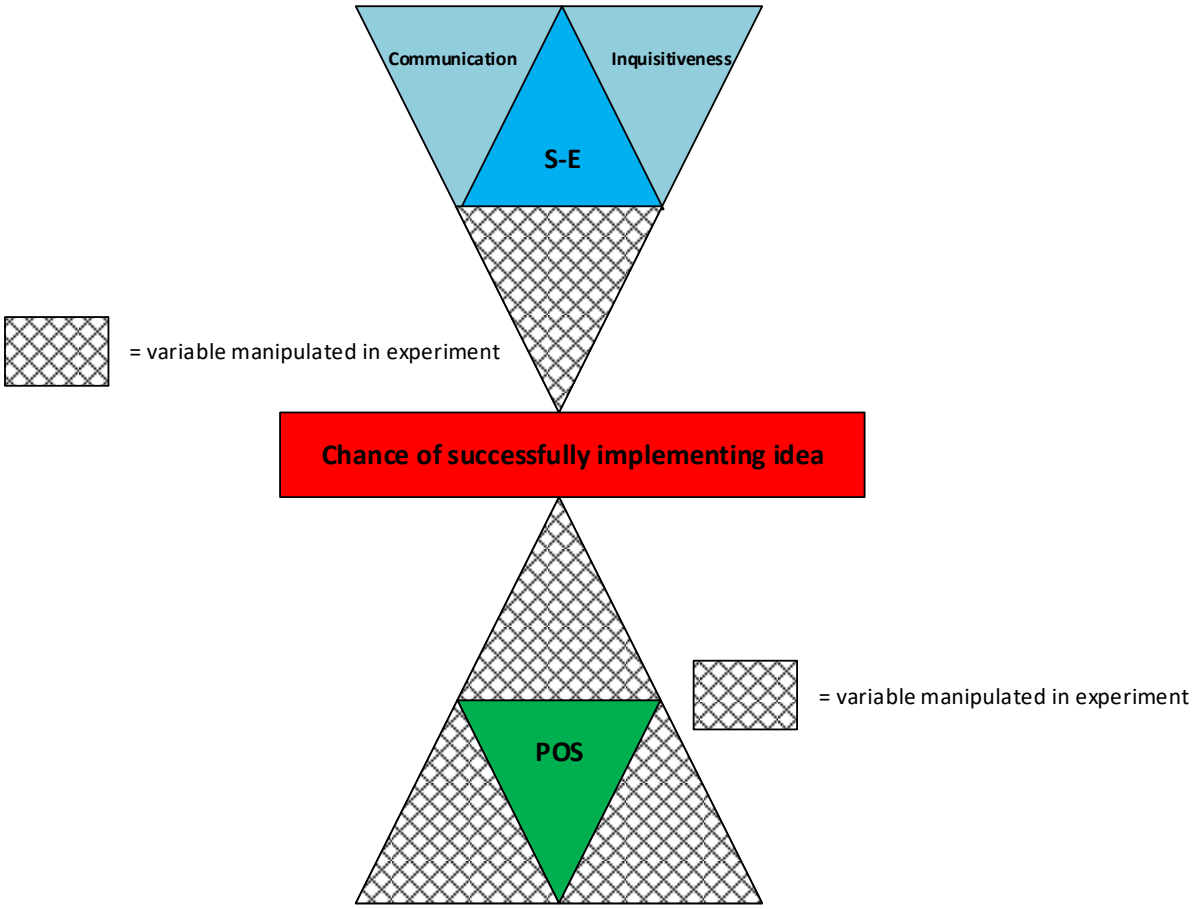

Figure 7.10: Variables included in the factorial experiment

In order to reject or accept the formulated hypotheses, the data was collected and analysed using the appropriate statistical techniques. The collection of the data, measurement, and analysis procedures are described in more detail in subsequent sections.

7.9 SAMPLE SELECTION

The sampling process consisted of defining the target population; determining the sample criteria, outlining the sampling frame; selecting a sampling method and procedure; and determining the sample size (Given, 2008: 799).

7.9.1 Target population

As with the qualitative stage, the target population comprised employees of organisations who can contribute useful ideas and take actions to implement their ideas. Since the EVM was based on an idea for improving a process and involved interaction with a manager, in essence the target population therefore included anyone in the organisation who is exposed to some or other

organisational process and reports to a senior position. The target population is not overly restrictive and the population was thus convenient and appropriate to sample.

7.9.2 Sampling criteria

In terms of selecting a sample, based on the explanation of the target population, the first criterion for finding the target population was that the individual was part of an organisation where innovation is valued and expected from employees. The second criterion was that the individual had to be capable of behaviours such as suggesting new ways to achieve objectives, applying new work methods, searching out new technologies, and investigating and securing resources to implement new ideas (Yuan & Woodman, 2010: 324). Furthermore, it takes some time for an employee to first become acquainted with the organisation's people, processes, procedures and culture concerning innovation (Bessant *et al*., 2001: 69). Hence, as an additional criterion, an employee had to have worked for the organisation for a minimum of one year to be eligible for selection for this study. Lastly, the target population excluded executive management as well as departmental and business unit managers, since this study was aimed at employees who had to engage a manager to get their ideas implemented.

7.9.3 Sampling frame

Since this study was conducted in Namibia, and per the sampling criteria, the sampling frame for this study (Zikmund, 2003: 373) was employees regarded as having the potential to engage in innovative behaviour, who have worked for more than a year in the respective Namibian-based organisation. Furthermore, to conform to the criterion of organisations where innovation is valued and expected, an eligible organisation had to have been in existence for more than ten years, employ more than 1000 people and in general be prised as a market leader in the respective industry.

After determining potentially suitable organisations, the researcher identified an organisation which conformed to the criteria of having sustainable competitive advantage, having an impact, economic progress and superior organisational performance. At the time of the research, the organisation had been in business in Namibia for more than 30 years and is prised as a market leader in the respective industry (financial services). The sample frame therefore consisted of the 1 300 full-time employees of this organisation.

7.9.4 Sampling method

A non-probability sampling technique was used in this phase to select participants (Given, 2008: 562). Participants were selected because they were accessible and therefore relatively easy for the researcher to recruit, i.e. convenience sampling. Essentially, with convenience sampling, individuals who are the most ready, willing, and able to participate in the study are the ones who

are selected to participate (Given, 2008: 124). However, cognisance was still taken of participants that were not reflective of the population being studied. In this study, participants not reflective of the population being studied included executive management, departmental and business unit managers, consultants (not working permanently for the organisation), or people who had joined the organisation recently and were not employed for a year, or interns or even visitors. Using convenience sampling also proved to be time and cost effective for this study.

7.9.5 Sampling procedure

After obtaining the required permission from the managing director of the organisation to conduct the research, the researcher approached the managers of the different departments and business units of the organisation to recruit participants. The researcher then arranged with the respective managers to schedule a session of 30 minutes with the staff who fit the sampling criteria – a full-time employee working for the organisation for a year or more, who can contribute ideas and take action on their ideas – at a convenient place in their work area. Most often this took place in a location where departmental meetings were typically held, such as a boardroom or a common meeting area. Thus, the participants were essentially recruited by organising meetings with the different entities (e.g. branches, divisions, departments) in the organisation. Eventually, these meetings were set up with 42 different entities in the organisation.

7.9.6 Sample size and random assignment of treatments

Sample size refers to the number of participants that took part in the study; and random assignment of treatments refers to the manner in which the questionnaires were assigned to the participants in the study. Each of these concepts is explained in more detail below.

7.9.6.1 Sample size

The number of individuals to include in the research study, i.e. the sample size of the study, is an important consideration in the design of a study. Sample size is closely tied to statistical power, which is the ability of a study to enable detection of a statistically significant difference when there truly is one (Eng, 2003: 309).

The number of participants that are needed to maintain adequate power when using statistics designed to detect differences (effects) is recommended by Van Voorhis and Morgan (2007: 48) – based on the work of Cohen (1988) – as: Given a medium to large effect size, 30 participants per cell should lead to about 80 percent power. Cohen (1988) conventions suggest an effect size of 0,20 is small, 0,50 is medium, and 0,80 is large (Van Voorhis & Morgan, 2007: 48).

A factorial experiment was used in this study and Van Voorhis and Morgan (2007: 49) advised that a good general rule of thumb for sample sizes for a factorial experiment is 300 cases or 50 participants per factor. There were four factors in this study, equating to 4 x 50 = 200 participants.

The eventual sample size for this study was 425 participants. Sixteen experiments were conducted to assess each possible manipulation of the independent variables, and one of the experiments was repeated as a control group to test for reliability of the study. The matter of a control group is discussed in more detail in Section 7.10. So there were 15 experiments with 25 participants and one experiment with 50 participants, and thus the total sample size included 425 participants.

7.9.6.2 Random assignment of treatments

Extraneous variable are variables that may influence the outcome of an experiment, though they are not the variables that are actually of interest. These variables are undesirable because they can add error to an experiment. With an experimental research design, it is important to eliminate possible effects of extraneous variables (Zikmund, 2003: 265). Random assignment of subjects and treatments is one device for equally distributing or scattering the effects of extraneous variables. This may be achieved by ensuring that extraneous variables affect all treatments equally and, importantly, by random allocation of treatments to subjects, ensuring that each subject is equally likely to receive each treatment, and is usually referred to as “randomisation” (Zikmund, 2003: 263; Jackson & Cox, 2013: 33). Randomisation assures the researcher that repetition of an experiment – under the same conditions – will show the true effects of the treatment, if they exist. Random assignment of treatments provides “control by chance”, meaning random assignment of subjects allows the researcher to assume that the groups are identical with respect to all variables, except for the experimental treatment (Zikmund, 2003: 263).

To achieve randomisation for this study, the questionnaires were arranged from Experiment 1 to Experiment 16, then starting again from Experiment 1 to Experiment 16, etc. The questionnaires were then handed out to the participants in the meetings that were set up in the different entities in the organisation. This was done randomly, based on how the participants sat or stood in the meeting place, which was totally beyond the control of the researcher. When groups were large, the researcher handed out packs of questionnaires to some of the participants to assist with handing out the questionnaires to the other participants in the group. By handing out the questionnaires in this manner, there was very little possibility for bias in the sense that a specific experiment (e.g. Experiment 9) could only be handed out to one department (e.g. the Credit department) or to one type of person (e.g. of a certain age or gender).

7.10 CONTROL GROUP

It was mentioned above that one of the experiments was repeated as a control group to test for reliability of the study. Reliability describes how far a particular test, procedure or tool, such as a questionnaire, will produce similar results in different circumstances, assuming nothing else has changed (Roberts, Priest & Traynor, 2006: 41). Essentially, this means that the research tool

should provide the same information if used for example by different people or if it is used at different times.

Hence, in the case of this study, the questionnaires used for collecting the data would be considered as reliable if similar results were obtained for the respective experiments when the data collection was repeated, i.e. the same questionnaires were used again.

Methods of estimating the reliability of measurements do have some limitations, for example test-retest reliability is potentially flawed if respondents' previous experiences in the first testing influences responses in the second testing. Moreover, intervening events between the two administrations may also account for differences between the two sets of results and contribute to flaws in external validity (Roberts *et al*., 2006: 43).

Due to these limitations, and since it would be impractical from a time and cost perspective to repeat all the questionnaires for a second time to assess reliability, only one experiment was repeated (during the same time as the original administration of the questionnaires but with different participants) to assess the reliability of the questionnaires.

The results of the repeated experiment should in essence be equal to the results of the initial experiment in order for the questionnaires to be considered as reliable.

In this study, Experiment 9 was repeated as a control group to test for reliability of the study. Thus, the two results of Experiment 9 (the result for Experiment 9 and the result for the control experiment) should in essence be equal in order for the questionnaires to be considered as reliable. An independent samples t-test was conducted to determine whether there was a statistically significant difference between the two groups. It was found that the results of Experiment 9 and the control experiment did not have a statistically significant difference, $t(48) = -0{,}520$, $p = 0{,}606$. It could thus be concluded that the questionnaire produced similar results in different circumstances, i.e. it delivered the same information when used by different people, confirming its reliability for use in this study.

7.11 PILOT INVESTIGATION

In the design of experiments, pilot investigations are often carried out to allow the design to be tested and refined before the final implementation and data collection take place, and to ensure that respondents will not experience problems in answering the questionnaire (Saunders *et al.,* 2003: 386; Jackson & Cox, 2013: 34).

Pilot testing was also utilised for this study. The questionnaires were submitted to three experts to comment on the structure of the questionnaire and the representativeness and suitability of the questions. After the experts' input, some amendments were made to the questionnaires, relating

primarily to the layout of the Likert scales in order to make the questionnaire shorter. This led to a reduction from seven pages to four pages (including the front page). Once these changes had been made, the experts were satisfied that the requirements were met and that the questionnaires were structured correctly.

After the experts' input and refinement of the questionnaires, the primary concerns were the time it would take to complete the questionnaire, i.e. that the questionnaire was not too long to cause response fatigue (Hughes & Huby, 2004: 40); that the intended participants could relate to the vignette; that the participants would understand how to fill in the questionnaire; and that there were not any words or sentences that were beyond participants' understanding.

One experiment questionnaire (Experiment 1 – all variables low level) was tested by eight respondents in the organisation where the data was to be collected. The feedback from the pilot study indicated that the questionnaire took between 10 and 15 minutes to complete, had clear instructions and questions, and was straightforward to complete. Only one issue came up where one of the participants was unsure if the scenario described in the vignette related to the other questions in the questionnaire as well. This matter was addressed and the instruction of the question not involving the vignette was changed to refer to "everyday work environment". In a subsequent test of the final version with three more respondents, it was confirmed that wording the questions in this way made it clear to the participants what was expected when answering the questions.

The researcher also ensured that the individuals who took part in the pilot tests were not included in the actual data collection process.

7.12 DATA COLLECTION

Primary data was collected with a personally administered written questionnaire which the participants had to complete with a pen.

In the questionnaire, the vignette with the relevant manipulation of the independent variables (treatments) was presented first, followed by a semantic differential scale to measure the dependent variable (Chance of successfully implementing idea, COSII). After measurement for the dependent variable, the control variables were recorded (demographical questions about age, experience, etc.), and on the last page, S-E, POS, Communication and Inquisitiveness were measured through the use of five-point multiple-item Likert scale questions. A sample of one of the questionnaires which was used to collect the data (Experiment 1 – all variables at the low level) is presented in Appendix D.

Validity and measurement of the respective constructs are discussed in more detail in subsequent sections.

Research participants were recruited by setting up appointments (through the respective managers) with the different entities in the organisation, and the participants eventually consisted of the employees who showed up for these meetings. The researcher first phoned the relevant manager to discuss and explain the data collection procedure and then followed up with an e-mail to confirm what had been discussed.

Since the researcher engaged the participants for the study in their work environment, all the meetings with the participants were scheduled to take place during the first 30 minutes of official working hours, hence usually between 07h30 and 08h00 in the morning. The researcher then briefed the participants by explaining the data collection procedure as well as the matters of anonymity and confidentiality, after which participants were asked to complete the questionnaire at the meeting venue and before they returned to their work stations. This proved to be a good routine for collecting the data, since most of the departments were keen to participate in this timeslot, and the participants were engaged before they became involved with their work, meaning they could focus their undivided attention on the questionnaire. The researcher played no role in the respondents' completion of the questionnaire, as he left the venue where the participants gathered while they were answering the questionnaire, making the data collection completely objective.

Although maybe more tedious than using an online procedure, collecting data with personally administered written questionnaires holds many advantages (Saunders *et al*., 2003: 393).

Questionnaires are relatively quick and easy to create, code and administer. There is none of the risks associated with an online procedure (e.g. e-mails or a website). Once the meetings had been scheduled, administering the questionnaires was time and cost effective. It was convenient for the participants to complete the questionnaire as time was specifically set aside for this through the scheduled interventions. Probably the main advantage of personally administered written questionnaires is a high response rate. Since the participants were specifically scheduled to take part in the research, the response rate was 100 percent, meaning the researcher kept on recruiting participants through the scheduled interventions until the targeted sample size of 425 participants had been achieved. The questionnaires that were not completed satisfactorily, or did not meet the criterion of an employee working for the organisation for more than a year, were discarded. The researcher then just reprinted these questionnaires and distributed them again at the next meeting of participants.

Data was collected between 24 October and 5 December 2016 and a total of 425 questionnaires were adequately completed.

7.13 MEASUREMENT

The questionnaire measured five constructs, namely the dependent variable (Chance of successfully implementing idea, COSII), S-E, POS, Inquisitiveness and Communication. Six control variables were also recorded, namely age, experience, gender, department, job grade and education.

The measurement of the dependent variable was based on the arguments (discussed in Section 7.4) of what constitutes implementation and how it has been measured in similar innovation-related studies, i.e. confidence in ability to design new procedures for the organisation (Axtell *et al*., 2000: 272; Gerber *et al*., 2012: 2); probability of the idea being approved for further development (Baer, 2012: 1109); probability of appropriate and committed use of the innovation (Klein & Sorra, 1996: 1055); and the person's view of the probability that they will be able to successfully implement the idea.

The other constructs were all measured through instruments which were based on established measurement instruments that had been utilised in previous research.

7.13.1 Measurement of S-E

To measure S-E, the researcher used an adaptation of Bandura's (1982) nine-item S-E scale which is intended to assess the degree to which individuals feel they are capable of performing in a certain manner or of attaining certain goals (Kumar & Uzkurt, 2010: 14). Previous studies have reported evidence of reliability and validity for these S-E measures (Compeau & Higgins, 1995; Chen *et al*., 2001; Kumar & Uzkurt, 2010). Respondents indicated the extent of agreement with five statements on a five-point Likert-type scale (*1 = Strongly Disagree, 5 = Strongly Agree*). The instrument that was used to measure S-E is shown in Figure 7.11 below.

When thinking about yourself in the working environment, please rate whether you agree or disagree with the following statements (use an "X" to indicate your answer):

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
S1	I feel competent to deal effectively with the real world.	1	2	3	4	5
S2	I can handle the situations that life brings.	1	2	3	4	5
S3	I am strong enough to overcome life's struggles.	1	2	3	4	5
S4	I usually feel I can handle the typical problems that come up in life.	1	2	3	4	5
S5	I feel that I have enough information to make good decisions.	1	2	3	4	5

Figure 7.11: Measurement instrument for S-E

7.13.2 Measurement of POS

To measure POS, prior studies surveying many occupations and organisations provided evidence for the high internal reliability and unidimensionality of the Survey of Perceived Organizational Support (SPOS) (Eisenberger *et al*., 1986, 1990). This study made use of some of the items of the eight-item short form used by Rhoades, Eisenberger and Armeli (2001: 828). Respondents indicated the extent of agreement with five statements on a five-point Likert-type scale (*1 = Strongly Disagree, 5 = Strongly Agree*). The instrument that was used to measure POS is shown in Figure 7.12 below.

When thinking about your everyday work environment, please rate whether you agree or disagree with the following statements (use an "X" to indicate your answer):

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
P1	My organisation really cares about my well-being.	1	2	3	4	5
P2	My organisation strongly considers my goals and values.	1	2	3	4	5
P3	My organisation cares about my opinions.	1	2	3	4	5
P4	Help is available from my organisation when I have a problem.	1	2	3	4	5
P5	My organisation would forgive an honest mistake on my part.	1	2	3	4	5

Figure 7.12: Measurement instrument for POS

7.13.3 Measurement of Communication

Communication was assessed on the basis of criteria developed by Bubas (2001: 572). Bubas (2001: 557) conducted a study to determine the dimensions of interpersonal communicative competence. Bubas (2001: 557) firstly identified a total of 23 skills and traits related to interpersonal communicative competence by various authors, and subsequently developed a research instrument named Interpersonal Communication Competence Inventory (ICCI) for the measurement of those skills and traits. After evaluation of the ICCI scales, Bubas (2001: 557) factor analysed total scores to identify the possible dimensions of interpersonal communication competence. Respondents indicated the extent of agreement with five statements on a five-point Likert-type scale (*1 = Strongly Disagree, 5 = Strongly Agree*). The instrument that was used to measure Communication is shown in Figure 7.13 below.

When thinking about how you communicate in the working environment, please rate whether you agree or disagree with the following statements (use an "X" to indicate your answer):

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
C1	I am able to produce messages that are not difficult for others to understand.	1	2	3	4	5
C2	I am able to produce messages that are not difficult for others to develop insight into their true meaning.	1	2	3	4	5
C3	When communicating to achieve a specific goal, I am able to accomplish my goal with a reasonable level of effort and resource investment.	1	2	3	4	5
C4	I have a feeling of accomplishment when I experience the successful outcomes involving a communicative episode or effort.	1	2	3	4	5
C5	Compared to the average, when I interact with other people through communication in a given social context, I view my interaction as competent and acceptable.	1	2	3	4	5

Figure 7.13: Measurement instrument for Communication

7.13.4 Measurement of Inquisitiveness

To measure Inquisitiveness, the researcher used an adaptation of the "Work-Related Curiosity Scale" developed by Mussel *et al*. (2012: 111). The theoretical background of the scale construction was based on a definition of curiosity in its epistemic form, including the enjoyment of activities like seeking information, knowledge acquisition, learning and thinking, as well as persisting in these activities in exploratory behaviours until the desired information is obtained or the problems have been solved (Mussel *et al.,* 2012: 115). Mussel *et al*. (2012: 115) conducted two studies to test the scale, and found that the scale had acceptable reliability in terms of internal consistency, and exploratory and confirmatory factor analyses revealed that a one-dimensional solution explained variance reasonably well. Respondents indicated the extent of agreement with five statements on a five-point Likert-type scale (*1 = Strongly Disagree, 5 = Strongly Agree*). The instrument that was used to measure Inquisitiveness is shown in Figure 7.14 below.

When thinking of your own curiosity, please rate whether you agree or disagree with the following statements (use an "X" to indicate your answer):

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I1	I am curious about both the practical and the theoretical aspects of a problem.	1	2	3	4	5
I2	I enjoy pondering and thinking.	1	2	3	4	5
I3	I am eager to learn.	1	2	3	4	5
I4	I keep thinking about a problem until I've solved it.	1	2	3	4	5
I5	I carry on seeking information until I am able to understand complex issues.	1	2	3	4	5

Figure 7.14: Measurement instrument for Inquisitiveness

Sixteen questionnaires were developed which differed only on the basis of the treatment of the respective independent variables of the factorial experiment. The questionnaires were in hardcopy and personally administered by the researcher.

7.14 VALIDITY

There are several potential threats to validity that will raise questions about a researcher's ability to conclude that the treatment affects an outcome and not some other factor. The major validity threats can be categorised under internal validity, external validity, construct validity and statistical conclusion validity (Creswell, 2008: 163). Each of these threats is discussed in more detail below.

7.14.1 Internal validity

Internal validity indicates whether the independent variable was the sole cause of the change in the dependent variable (Zikmund, 2003: 271).

If the observed results are influenced by the confounding effects of extraneous factors, the researcher will have a problem in making valid conclusions about the relationship between the experimental treatment and the dependent variable (Zikmund, 2003: 271). The major types of extraneous variables that may have jeopardised internal validity for this study, their descriptions, and the response of the researcher to minimise the threat of the variable are summarised below in Table 7.13.

Table 7.13: Responses to threats to internal validity

Type of threat to internal validity (extraneous variables)	Description of threat	Response to minimise threat
History	Because time passes during an experiment, events can occur that unduly influence the outcome beyond the experimental treatment (Creswell, 2008: 163).	The data collection period was six weeks. It is highly unlikely that something significant could have changed in the organisation during the course of six weeks. There were also no such events which the researcher was aware of.
Maturation	Participants in an experiment may mature or change during the experiment, thus influencing the results (Creswell, 2008: 163).	This threat was not a concern in this study.
Selection	Participants can be selected who have certain characteristics that predispose them to have certain outcomes (Creswell, 2008: 163).	The participants were selected through random assignment.
Mortality	Participants drop out during an experiment due to many possible reasons. The outcomes are thus unknown for these individuals (Creswell, 2008: 163).	This was not a threat for this study, since the data collection took approximately 20 minutes per participant group.
Diffusion of treatment	Participants in the control and experimental groups communicate with each other. This communication can influence how	The participants were asked in the briefing not to discuss the questionnaire with any of their colleagues. Also, the data collection

Type of threat to internal validity (extraneous variables)	Description of threat	Response to minimise threat
	both groups score on the outcomes (Creswell, 2008: 163).	took approximately 20 minutes per participant group, allowing very little time for discussion between people.
Instrumentation	The instrument changes between a pretest and post-test, thus impacting the scores on the outcome (Creswell, 2008: 163-164).	There was no pre- or post-test in this design and therefore this threat was not a concern in this study.
Compensation/resentful demoralisation	The benefits of an experiment may be unequal or resented when only the experimental group receives the treatment (Creswell, 2008: 163-164).	No benefits or awards were provided for taking part in the study. Respondents participated out of free will.
Testing	Participants become familiar with the outcome measure and remember responses for later testing.	There was no later testing, only one outcome measure in one test.
Hawthorne effect	Change in research participant behaviour due to the fact that they know they are being observed (Zikmund, 2003: 266).	This was possibly the biggest threat to internal validity for this study. The participants were informed that the study was about innovation and idea implementation, and there is a possibility that participants might have answered the questions for measuring the dependent variable more favourably, because they knew they were being evaluated. This threat was mitigated by the researcher informing the participants that the questionnaires were anonymous and that there were no 'wrong or right' answers, and that the questionnaire was just measuring behaviours. The researcher also asked the participants to answer the questions truthfully.
Researcher unintentional expectancy effect (Rosenthal, 1997: 1)	Researchers unintentionally lead participants to behave or respond in particular ways.	The researcher mitigated this risk by strictly following a script which was drafted to brief participants before taking part in the study. The researcher made sure not to mislead the participants in any manner as to the behaviours that were desired.

7.14.2 External validity

External validity, indicates the extent to which the results of the experiment can be generalised to other persons, setting and future situations (Zikmund, 2003: 271).

The major types of external validity threats, their descriptions, and the response of the researcher to minimise the threats are summarised below in Table 7.14.

Table 7.14: Responses to threats to external validity

Type of threat to external validity	Description of threat	Response to minimise threat
Interaction of selection and treatment	Because of the narrow characteristics of participants in the experiment, the researcher cannot generalise to individuals who do not have the characteristics of the participants (Creswell, 2008: 165).	The researcher restricts claims concerning the results that cannot be generalised. The participants in this study were essentially anyone who can generate and implement an idea; thus a fairly broad depiction of the participants.
Interaction of setting and treatment	Because of the characteristics of the setting of participants in an experiment, a researcher cannot generalise to individuals in other settings (Creswell, 2008: 165).	This is probably the prevalent threat to external validity – as the particular circumstances and environment of the organisation may be very specific as opposed to other organisations in other circumstances and environments. In order to address this threat, additional experiments in new settings will have to be conducted to see if the same results occur as in the initial setting.
Interaction of history and treatment	Because results of an experiment are time bound, a researcher cannot generalise the results to past or future situations (Creswell, 2008: 165).	This is also a significant threat to external validity. Organisations and circumstances are dynamic and to address this threat the study needs to be replicated at a later time to determine if the same results occur as at the earlier time.

7.14.3 Construct validity

Construct validity refers to the degree to which inferences can legitimately be made from the operationalisations in the study to the theoretical constructs on which those operationalisations were based. In other words, construct validity is an assessment of how well constructs and concepts are translated into actual measures, and therefore threats to construct validity occur when researchers use inadequate definitions and measures of variables (Creswell, 2008: 164).

Concerning the operationalisation of the dependent variable, the measurement instrument was based on prominent theory on implementation (Klein & Sorra, 1996: 1055), included measures from previous studies of the same nature (Axtell *et al.,* 2000: 272; Gerber *et al*., 2012: 2; Baer, 2012: 1109), and the participants were also unambiguously asked to evaluate the chance of successfully implementing the idea.

Concerning the operationalisation of the independent variables, the manipulation of the variables was based on the findings from Phase One of the study, and were also supported through findings in the literature as disclosed in Section 7.3.5.

The other constructs which were measured (POS, S-E, Communication, Inquisitiveness) are all well-established constructs in the literature, and the measurement instruments which were applied were based on established instruments.

7.14.4 Statistical conclusion validity

Threats to statistical conclusion arise when researchers draw inaccurate inferences from the data because of inadequate statistical power or the violation of statistical assumptions (Creswell, 2008: 164). The relevant information concerning the statistical procedures which were followed are addressed in the data analysis section (Section 7.16) below.

Finally, the primary advantages of a factorial experiment design using the EVM methodology are that they generally have high internal and external validity because they combine random assignment to experimental conditions with usually large, representative samples (Ganong & Coleman, 2006: 456) Internal validity is enhanced because the values of the factors in the vignettes vary randomly, the factors are independent, and the researcher can assign values to vary more than would be possible in a real world. External validity is enhanced because of the ease with which probability sampling strategies may be used to gather large samples in a relatively short time (Ganong & Coleman, 2006: 456).

7.15 ETHICAL CONSIDERATIONS

The researcher requested approval for Phase Two of this study from the Research Ethics Committee: Human Research (Humanities) on 19 September 2016. Ethical approval for Phase Two was granted on 29 September 2016 (Protocol # SU-HSD-001997) subject to standard stipulations. The University of Stellenbosch Business School granted permission on 3 October 2016, as per stipulations. Standard stipulations were followed during the research, namely consent from participants, voluntary participation, anonymity of responses and rewards granted.

7.16 DATA ANALYSIS

The statistical techniques used to analyse data should be guided by the research objectives, the research design, the requirements of the hypotheses and the number and type of dependent and independent variables.

The objectives of this study were based on investigation of the influence of S-E and POS and associated variables on idea implementation. Four variables associated with S-E and POS were manipulated to test the effect on the chance of successfully implementing an idea in an

organisational setting, i.e. the independent variables in the experiment. The main constructs of S-E and POS as well as two other variables which were regarded as constants, Communication and Inquisitiveness, were also measured for each participant.

Thus, the study comprised of one dependent variable (Chance of successfully implementing idea, COSII) and four independent variables (Preparedness, Active listening, Managerial confidence, Consultation), which were manipulated in a factorial experiment; Measurements for the constructs of S-E and POS; Measurements for the variables Communication and Inquisitiveness; and Recording of the control variables (Department, Experience, Level of education, Job grade, Gender and Age - as disclosed in Section 7.6).

The independent variables were categorical, i.e. either having a high or a low value, and the dependent variable (COSII) was a continuous (interval) variable, i.e. the value was taken as the average of the scores of the six different questions on the semantic differential scale as displayed in Figure 7.5 in Section 7.4 and could therefore take on a range of values from one to five. Some of the control variables were categorical (gender, department, level of education, job grading) and some were continuous (experience and age). However, all the control variables were coded as categorical variables for the purpose of the data analyses.

The measurements for POS, S-E, Communication and Inquisitiveness were all taken as continuous. All of these variables (POS, S-E, Communication and Inquisitiveness) were measured using a five-point Likert scale with five questions, and the measurement of each variable was thus taken as the value of the average of the scores of the five questions on the Likert scale.

The proposed relationships between Communication, Inquisitiveness and S-E, and S-E, POS and COSII were first tested empirically by means of the structural equation modelling technique (SEM). SEM is a multivariate technique that examines a series of dependence relationships concurrently (Hair, Anderson, Tatham & Black, 1998: 578).

According to Byrne (2010: 3), there are several aspects that set SEM apart from multivariate procedures that have been used in earlier days. The first aspect is that SEM takes a confirmatory rather than an exploratory approach to data analysis. Secondly, whereas more traditional multivariate procedures are not capable of either assessing or correcting for measurement error, SEM is able to present explicit estimates of these error variance parameters. Thirdly, by using SEM, researchers are able to base their data analysis not only on observed measurements alone, but to incorporate both unobserved (i.e. latent) and observed variables. Finally, there are currently no widely and easily applied alternative methods for modelling multivariate relations.

The analysis techniques and statistical tests that were further applied are listed in Table 7.15 below.

Table 7.15: Data analysis techniques

Objective number (as per Section 1.3)	Hypothesised relationships	Analysis techniques
Objective 2	Hypotheses for the relationships between Communication, Inquisitiveness and S-E (Table 7.9, Section 7.8.1).	An independent samples t-test was used to determine if there is a difference in the rating of S-E between people with a low rating of Communication (ComLow = Group 1) and people with a high rating of Communication (ComHigh = Group 2).
		An independent samples t-test was used to determine if there is a difference in the rating of S-E between people with a low rating of Inquisitiveness (InqLow = Group 1) and people with a high rating of Inquisitiveness (InqHigh = Group 2).
		A simple linear regression was also used to assess the linear relationship between Communication and S-E, and Inquisitiveness and S-E.
Objective 3	Hypotheses for the relationships between S-E, POS and COSII (Table 7.10, Section 7.8.2)	An independent samples t-test was used to determine if there is a difference in the rating of COSII between people with a low rating of S-E (S-ELow = Group 1) and people with a high rating of S-E (S-EHigh = Group 2).
		An independent samples t-test was used to determine if there is a difference in the rating of COSII between people with a low rating of POS (POSLow = Group 1) and people with a high rating of POS (POSHigh = Group 2).
		A simple linear regression was also used to assess the linear relationship between S-E and COSII, and POS and COSII.
Objective 4	Hypotheses for the relationships between Communication, Inquisitiveness and COSII (Table 7.11, Section 7.8.3)	An independent samples t-test was used to determine if there is a difference in the rating of COSII between people with a low rating of Communication (ComLow = Group 1) and people with a high rating of Communication (ComHigh = Group 2).
		An independent samples t-test was used to determine if there is a difference in the rating of COSII between people with a low rating of Inquisitiveness (InqLow = Group 1) and people with a high rating of Inquisitiveness (InqHigh = Group 2).
		A simple linear regression was also used to assess the linear relationship between Communication and COSII, and Inquisitiveness and COSII.
Objective 4	Hypotheses for the factorial experiment (Table 7.12, Section 7.8.4)	A multi-factor (four-way) analysis of variance (ANOVA) was used to determine if there are main and/or interaction effects between the four independent variables on the continuous dependent variable (COSII). ANOVA explains what proportion of variation in the dependent variable (chance of successfully implementing idea, COSII) can be attributed to manipulation of the independent variables (Preparedness, Active listening, Managerial confidence and Consultation).

The computer program used to perform SEM was Linear Structural Relations (LISREL), a flexible program that can be applied in various situations (i.e. cross-sectional, experimental, and longitudinal studies). The software programme IBM SPSS Statistics 24 was used for all the other data analysis procedures for this study.

7.17 CAUSALITY

Causality refers to the relationship between events where one set of events (the effects) is a direct consequence of another set of events (the causes). Causal inference is the process by which researchers can use data to make claims about causal relationships. Since inferring causal relationships is one of the central tasks of science, it is a topic that has been heavily debated in philosophy, statistics, and the scientific disciplines (Hidalgo & Sekhon, 2011: 204).

A typical causal study changes one variable (cause) and then observes the effect on another variable (effect). If the cause precedes the effect, there is evidence for establishing causality. In other words, having an appropriate causal order of events (also called “temporal sequence”) is one criterion that has to be met to establish a causal relationship (Zikmund, 2003: 57). In this study, the independent variables (Preparedness, Active listening, Managerial confidence and Consultation) were considered as the causes, taken as having an effect on idea implementation (dependent variable).

“Concomitant variation” is the occurrence of two phenomena or events that vary together. When the criterion of concomitant variation is not met – that is, when there is no association between variables – reason suggests that no causal relationship exists. If two events vary together, one *may* be the cause. However, concomitant variation by itself is not sufficient evidence for causality, because the two events may have a common cause – that is, both may be influenced by another variable (Zikmund, 2003: 57). This is referred to as a “spurious relationship” – an apparent relationship between two variables that is not authentic as a cause-and-effect relationship (Zikmund, 2003: 479). When there is a relationship between variables where a change in one variable is accompanied by a change in another variable, but it is not clear which variable caused the change, the relationship is referred to as “correlation” (Saunders *et al.,* 2007: 450). The main distinction between correlation research and experimental (causal) research is the fact that experimental research involves direct manipulation of variables (Field & Hole, 2003: 10).

Thus, many factors are usually required for an effect to occur, but researchers rarely know all of them and how they relate to each other. This is one reason that causal relationships are not deterministic but only increase the probability that an effect will occur. It also explains why a given causal relationship will occur under some conditions but not universally across time, space, human populations, or other kinds of treatments and outcomes that are more or less related to those studied. To different degrees, all causal relationships are context dependent, so the generalisation of experimental effects is always an issue (Shadish *et al.,* 2002: 5).

Similarly, within the complex environment in which innovation happens in organisations, it is difficult to identify complex causal factors, and Zikmund (2003: 57) advised that research with the purpose of inferring causality should do the following:

1. Establish the appropriate causal order or sequence of events.
2. Measure the concomitant variation between the presumed cause and the presumed effect.
3. Recognise the presence or absence of alternative plausible explanations or causal factors.

In answer to the three criteria above, the vignette was structured to imply that the causes preceded the effect (Section 7.7); the measurement of the variation between the variables is discussed in the results chapter below (Chapter 8); and the presence or absence of alternative plausible explanations is discussed in the conclusions and recommendations (Chapter 9).

Lastly, even when these three criteria for causation are present, the researcher can never be certain that the causal explanation is adequate (Zikmund, 2003: 58).

CHAPTER 8
RESULTS

8.1 INTRODUCTION

The empirical results of Phase Two of the study are reported in this chapter.

Firstly, a description is provided of the realised sample of Phase Two of the study. The description of the realised sample includes the demographic profile of the sample and the descriptive statistics of the variables and constructs that were incorporated in this study. Following the description of the sample, the results of the corresponding statistical tests that were applied for each objective (as set out in Section 1.3) are presented, graphical representations are provided of the relationships between the respective variables and constructs, the results are interpreted according to the relevant hypotheses, and a resulting conclusion is drawn based on the analyses of the data.

The statistical techniques that were used to analyse the data were described in Table 7.15 in Section 7.16 and Table 8.1 below lists the references used in the data analysis tables in this section.

Table 8.1: Reference table for abbreviations

Abbreviation	Definition
P	Preparedness
AL	Active listening
MC	Managerial confidence
C	Consultation
POS	Perceived organisational support
S-E	Self-efficacy
Com	Communication
Inq	Inquisitiveness
COSII	Chance of successfully implementing idea
IV	Independent variable
DV	Dependent variable
CI	Confidence interval

8.2 REALISED SAMPLE

The sampling process and sample selection were described in Section 7.9. In summary, the participants for this study were employees of a large organisation in the financial services industry in Windhoek, Namibia. More specifically, the participants were full-time employees who had been

working for the organisation for a year or more; who were regarded as employees exposed to organisational processes (the vignette used for manipulation of the independent variables referred to a scenario where the person can improve a process); and who were regarded as employees that can contribute ideas and take action on their ideas in their various work environments. The participants excluded executive managers and departmental and business unit managers. The eventual sample size for this study was 425 participants.

The variables which were measured and recorded in this study through the use of a personally administered questionnaire are listed below in Table 8.2.

Table 8.2: List of variables

Variable	Type	Measurement
Chance of successfully implementing idea (COSII)	Dependent variable	Section 7.4
Self-efficacy (S-E)	Main construct	Section 7.13.1
Perceived organisational support (POS)	Main construct	Section 7.13.2
Communication	Constant	Section 7.13.3
Inquisitiveness	Constant	Section 7.13.4
Preparedness	Independent variable	Section 7.3.5
Active listening	Independent variable	Section 7.3.5
Managerial confidence	Independent variable	Section 7.3.5
Consultation	Independent variable	Section 7.3.5
Age	Control variable	Section 7.6
Gender	Control variable	Section 7.6
Experience	Control variable	Section 7.6
Department	Control variable	Section 7.6
Level of education	Control variable	Section 7.6
Job grade	Control variable	Section 7.6

The demographics of the participants in the sample and the descriptive statistics of the respective variables are provided in the following sections.

8.2.1 Demographic profile overview

8.2.1.1 Gender

Just more than two-thirds of the participants in this study were female (68%), and approximately one third (32%) was male. This is graphically illustrated in Figure 8.1.

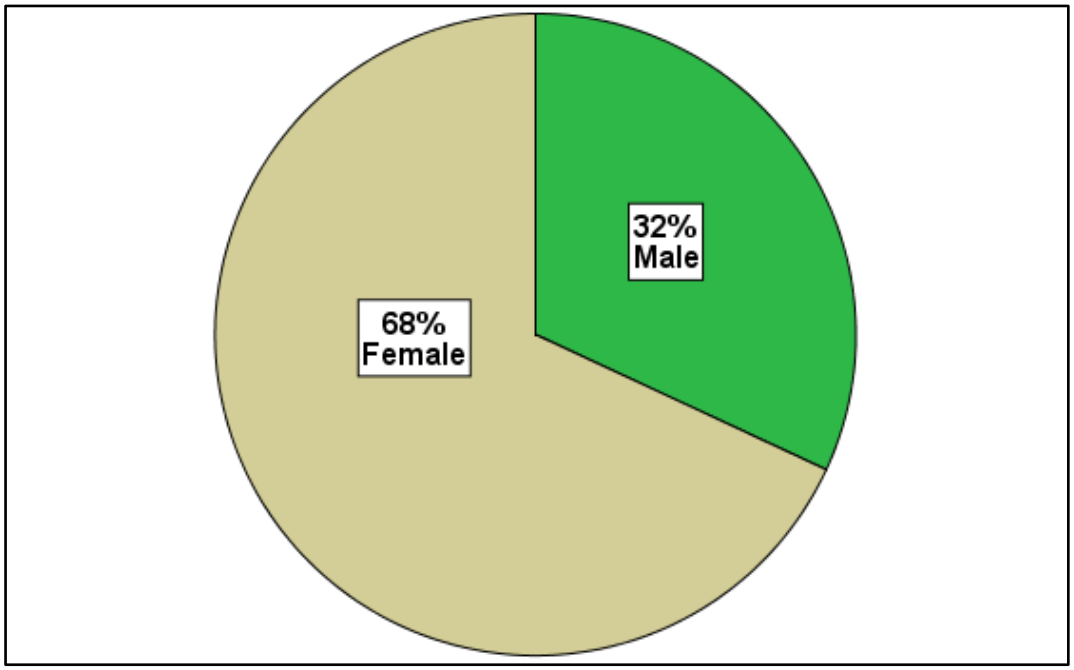

Figure 8.1: Distribution of sample according to gender

The percentage of one-third males to two thirds females is typical for the organisation from which the sample was taken, according to the Human Resources department of the organisation, which ascribed the phenomenon to the hiring policies of the organisation. Thus, it seems reasonable to conclude that the ratio of females to males in the sample was similar to the overall gender profile of the organisation.

8.2.1.2 Age

Participants were classified into four age groups:

- Group 1: Age 19 to 30.
- Group 2: Age 31 to 40.
- Group 3: Age 41 to 50.
- Group 4: Age 51 to 62.

The age distribution of the participants are shown below in Figure 8.2.

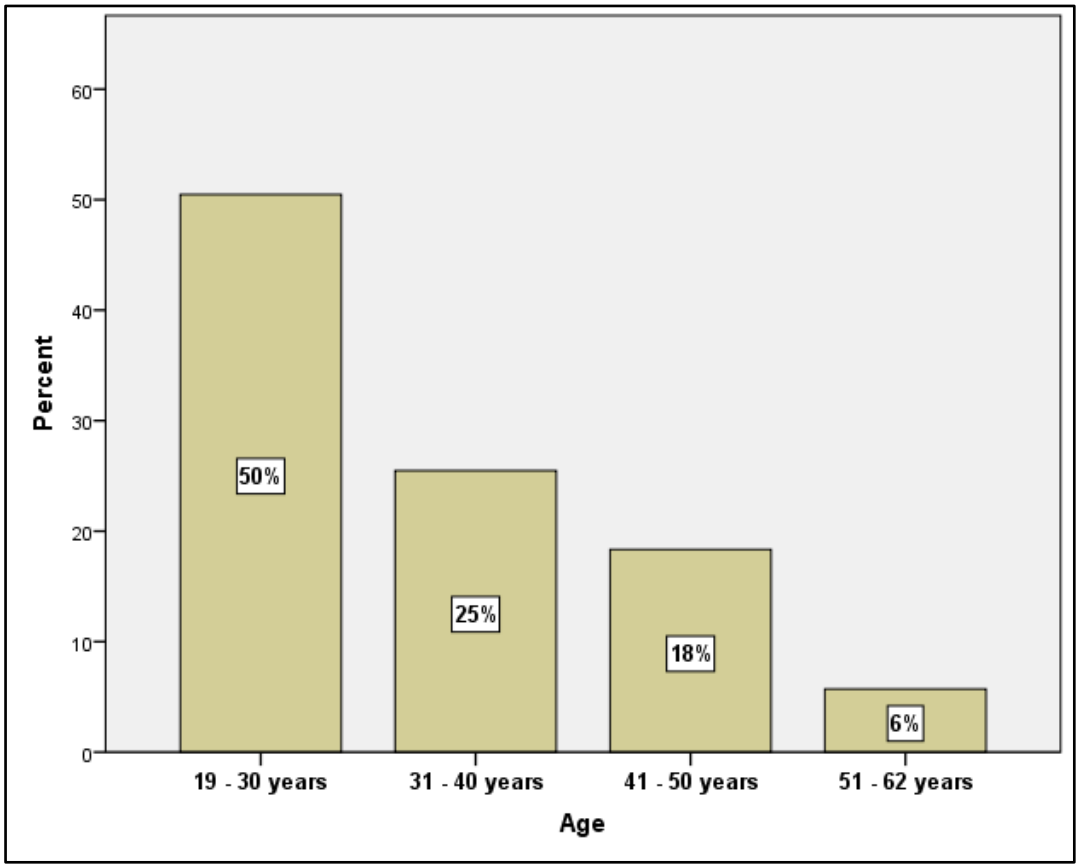

Figure 8.2: Distribution of sample according to age

Half of the participants in the sample (50%) were in the age group 19 to 30 years, and 25 percent of the participants were in the age group 31 to 40 years. Hence, 75 percent of the participants in the sample were between 19 and 41 years of age. This age spread was to be expected, since the typical organisation will have more junior- and mid-level positions than senior level positions, and the junior- and mid-level positions will normally be filled by younger persons with less work experience. Based on the above, it could be inferred that the spread of the participants' ages in the sample was characteristic of the age profile of the organisation.

8.2.1.3 Experience

The sampling criteria demanded that participants must have worked for the organisation for a minimum of one year. Concerning the participants' experience (years working for the organisation), 46 percent were included in the one to four year group and 29 percent were included in the five to ten year group, as displayed in Figure 8.3. Thus, 75 percent of the participants in the sample had worked for the organisation for between one and 11 years.

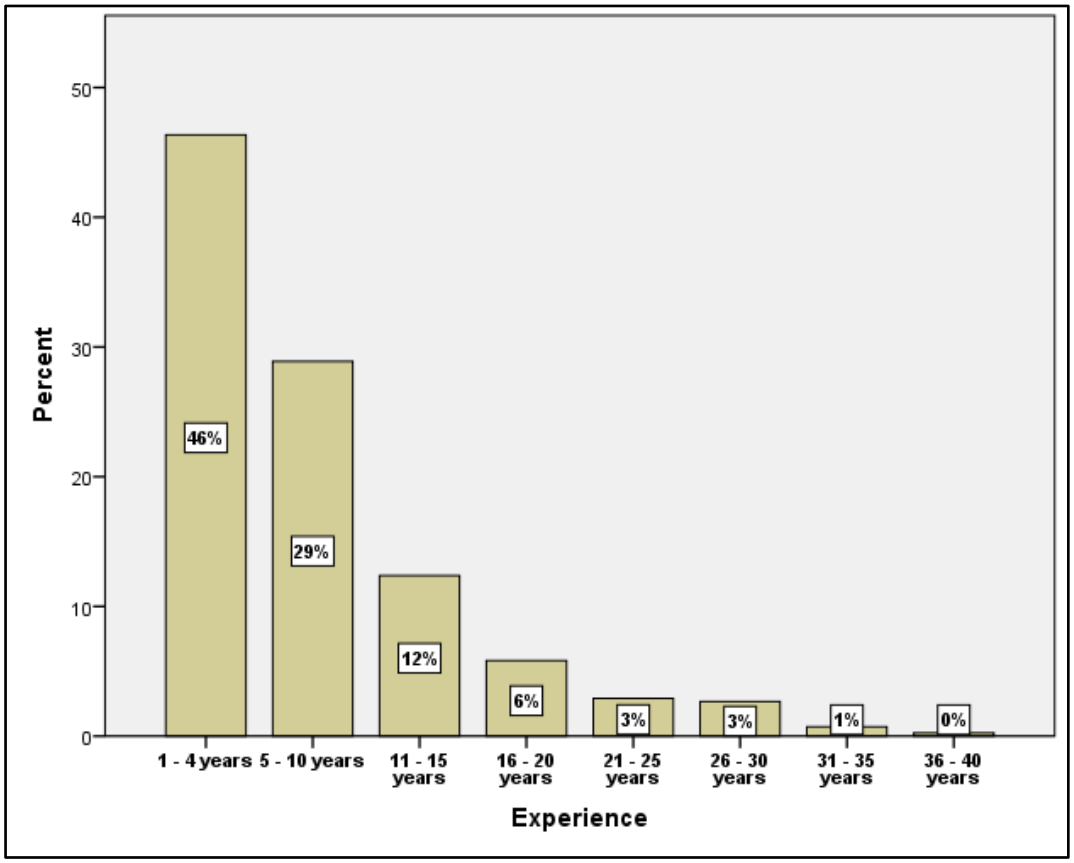

Figure 8.3: Distribution of sample according to experience

The spread of participants' experience is in accord with the age spread of the sample, based on the reasoning that there will be more junior-level positions in the typical organisation that would typically be filled by younger persons with less experience. It could thus be concluded that the spread of the participants' experience was comparable to the general experience profile of the organisation.

8.2.1.4 Level of education

More than half of the sample (56%) had an education level of Grade 12 (matric); people with a degree qualification comprised approximately a third (32%) of the sample; and people with a postgraduate degree made up 13 percent of the sample – as displayed in Figure 8.4.

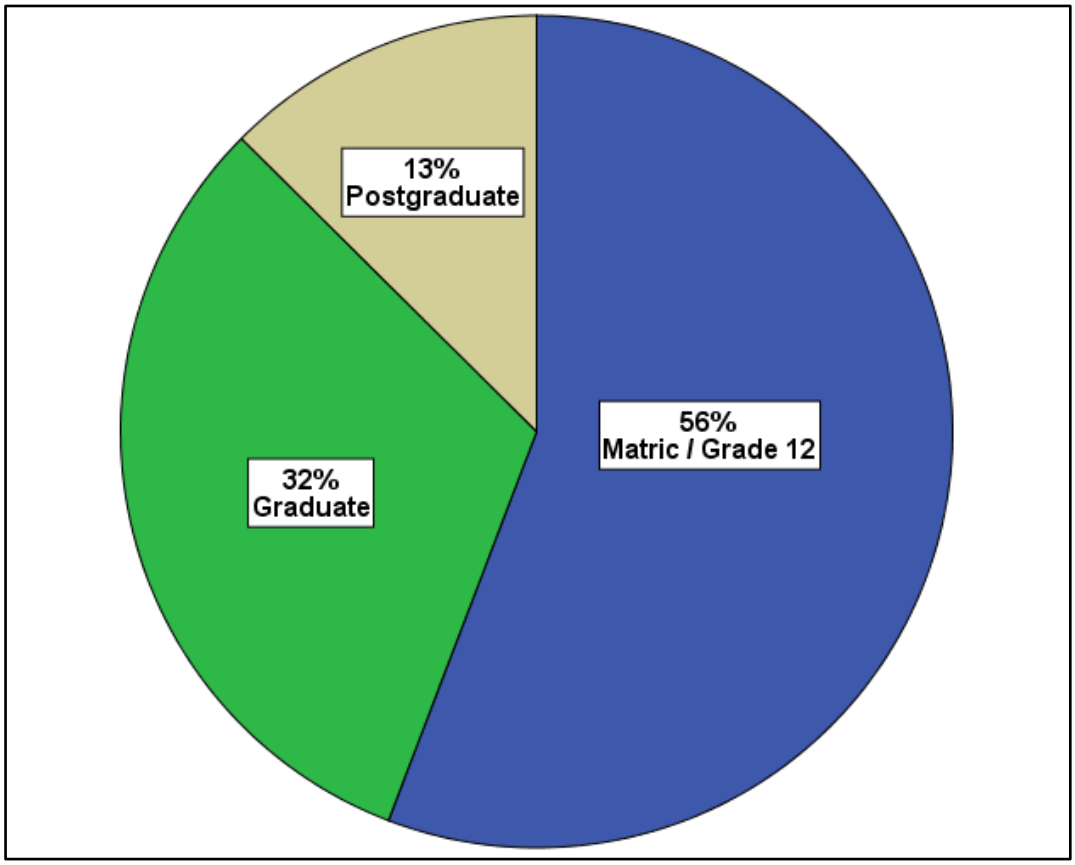

Figure 8.4: Distribution of sample according to level of education

The reason for the distribution of the education level in the sample could be ascribed to the organisation's requirement that employees need at least Grade 12 to be employed by them. Since the researcher was aware of this requirement, the questionnaire did not make provision for an education level category of less than Grade 12. It was thus expected that participants would have at least Grade 12.

In addition, the proportions of the level of education of employees resonate with the age and experience profiles of the sample, since it could be reasoned that more junior-level positions in the typical organisation filled by younger persons with less experience, would include more people who had joined the workforce immediately after school, i.e. people who had not yet embarked on further studies.

Based on the line of reasoning above, it seems that the spread of the participants' level of education corresponded with the expected profile of the level of education across the organisation.

8.2.1.5 Job grade

Job grades were grouped into three levels of hierarchy as follows:

- Junior level: Job grades 1 to 3, e.g. clerks and administrators.

- Middle level: Job grades 4 to 6, e.g. controllers and supervisors.
- Senior level: Job grades 7 to 9, e.g. managers lower than department and business unit managers.

The results of the job level proportions are displayed in Figure 8.5 below. Participants in the junior level job grades made up two-thirds of the sample (67%) and participants in the senior level job grades made up the smallest portion of the sample (8%).

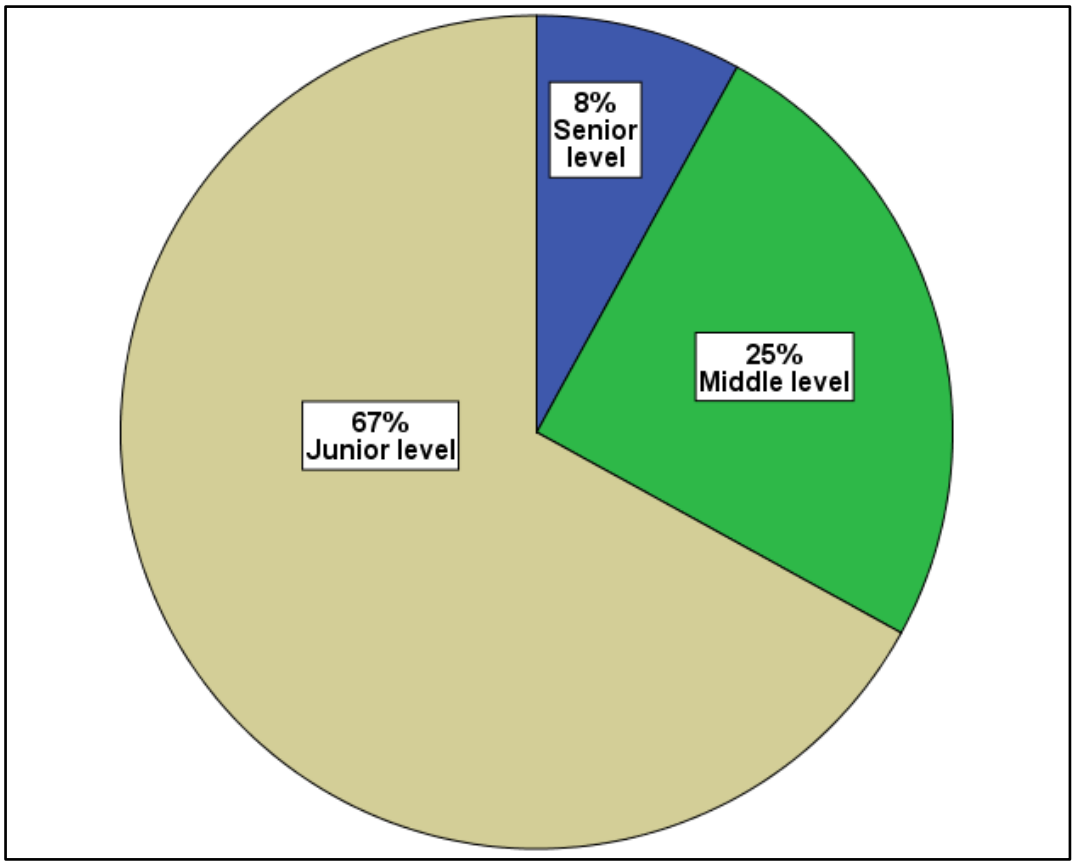

Figure 8.5: Distribution of sample according to job grade

The distribution of the participants according to job grades seems typical for this type of organisation. The organisation from which the sample was taken operates in the services sector and is also administration intensive, and would thus employ many staff members in junior level job grades in the administration and customer facing operations. From the above it appears that the sampling procedure provided a comparable sample of job grades in the organisation.

8.2.1.6 Departments

The different departments in which the participants worked and the percentage of participants in each department are shown in Figure 8.6 below. The departments were grouped into the following main categories:

- Front office, which included all customer-facing functions, e.g. sales and customer service.
- Back office, which included all non-customer-facing functions, e.g. administration.
- Support services, which included all support functions, e.g. human resources and information technology.

The participants who took part in the study were eventually distributed over 42 different departments in the organisation.

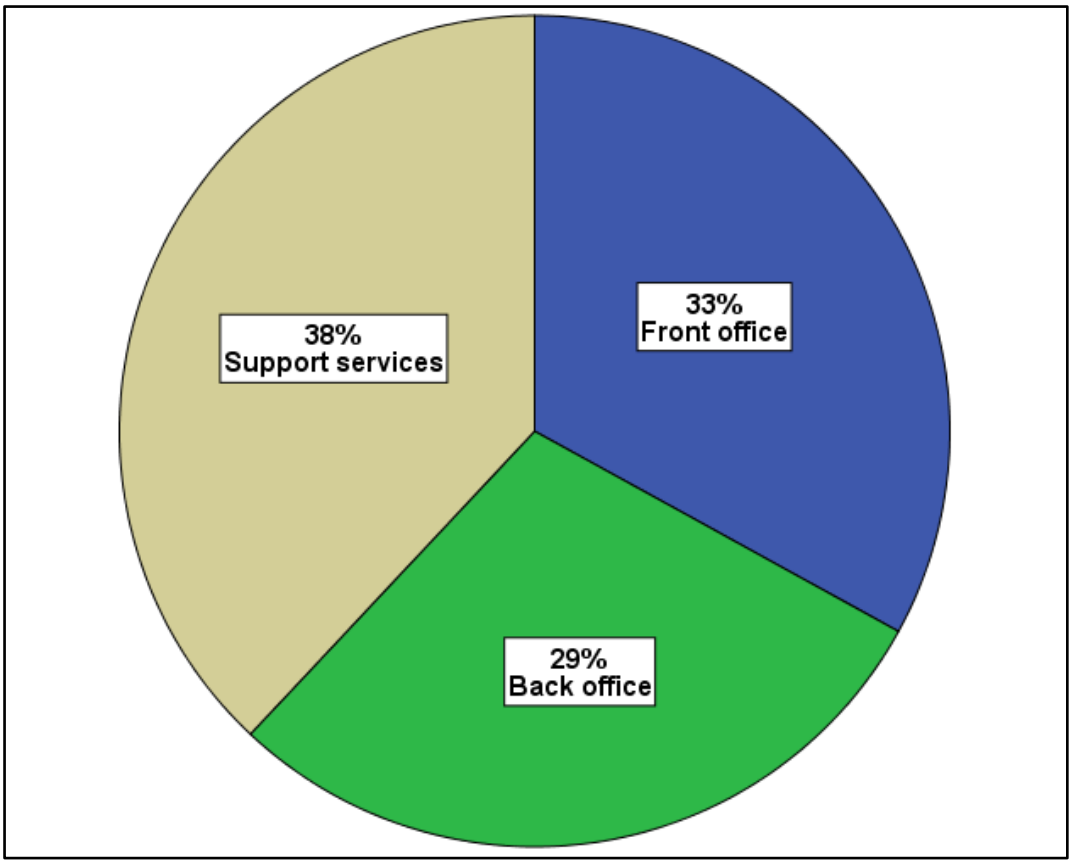

Figure 8.6: Distribution of sample according to department

Based on the number of departments in the organisation from which the participants were selected and the distribution of the participants amongst the different categories of departments, it may be accepted that the participants were selected from a representative sample of the different departments in the organisation.

8.2.1.7 Conclusion on the demographic profile of the sample

This study set out to investigate full-time employees who had been working for an organisation for a year or more, who were regarded as employees exposed to organisational processes and who could contribute ideas and take action on their ideas in their various work environments. In

essence, this description was aimed at finding “ordinary” employees, i.e. regular employees who deliver the fundamental tasks and activities in an organisation.

It seems probable from the demographic profiles presented in the above sections that the sampling process succeeded in selecting employees adequately spread across age groups, departments, experience, education, gender and job grades. It can further be inferred with reasonable certainty that the sample was representative of “ordinary” employees in an organisation, i.e. employees who are exposed to organisational processes and who can contribute ideas and take action on their ideas in their various work environments.

The descriptive statistics of the respective variables of the study are provided in the following sections.

8.2.2 Dependent variable - Chance of successfully implementing idea (COSII)

The dependent variable for the experiment was termed the “Chance of successfully implementing idea”, COSII. The measurement of this variable was described in Section 7.4 above.

The Cronbach alpha coefficient was utilised to test for internal consistency in the measurement of the dependent variable. An alpha level of 0,70 is recommended as minimum acceptable standard for demonstrating internal consistency (Laerd Statistics, 2015a). The measurement instrument for COSII had a high level of internal consistency, as determined by a Cronbach's alpha of 0,88.

The mean value of the COSII scores for each of the 16 experiments is illustrated in a boxplot in Figure 8.7 below. Across the 16 experiments, the mean value of COSII was 3,27, with a standard deviation of 0,83 and a range of 4 ($\overline{x} = 3,27$; $s = 0,83$; $1 \leq x \leq 5$).

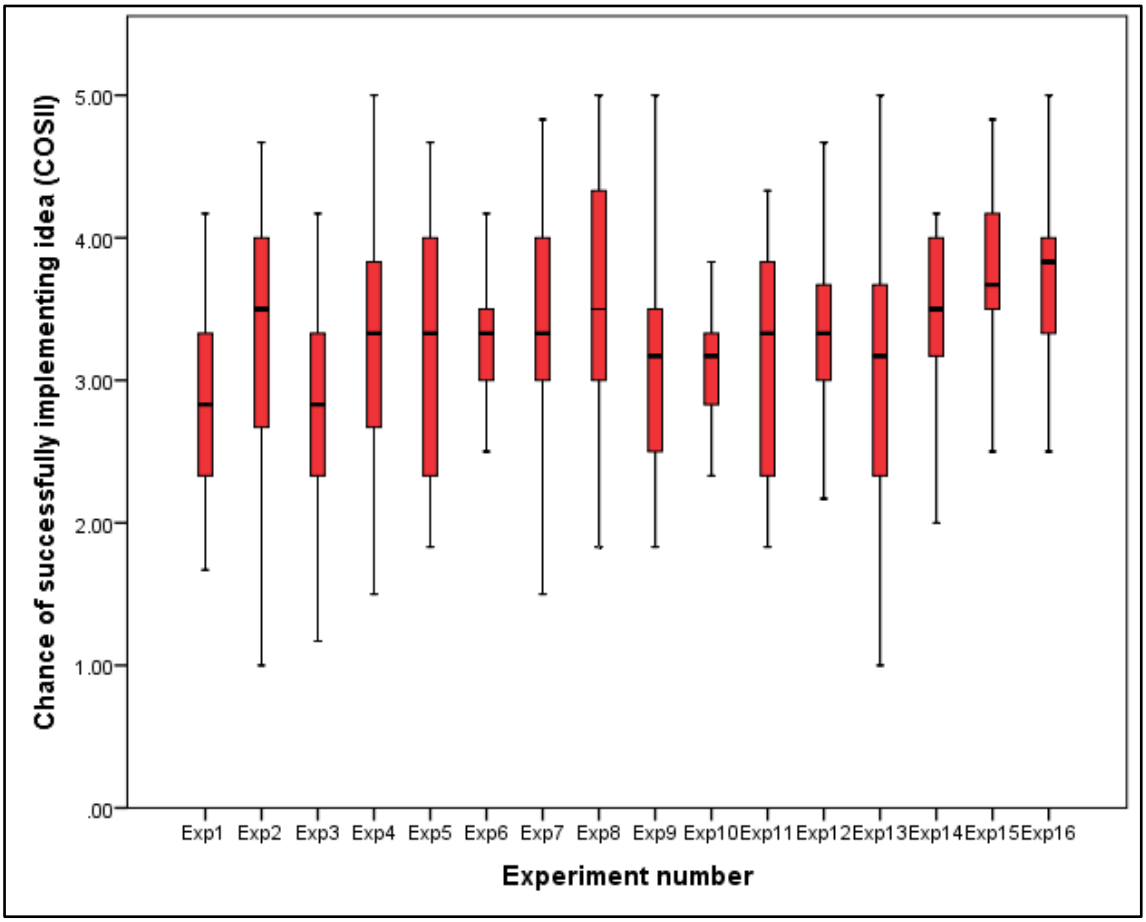

Figure 8.7: Boxplot of the mean values of COSII scores per experiment

A one-way ANOVA test was conducted to determine if the mean COSII scores of the respective experiments showed a statistically significant difference at the 0,05 level of significance. It was found that the means of the COSII scores for the respective experiments had a statistically significant difference $F(16, 408) = 2{,}295$, $p = 0{,}003$.

Thus, there is a statistically significant difference in the mean COSII scores between the respective experiments and therefore it appears that the particular experiments were actually influenced by the corresponding experimental treatments.

The mean values of the COSII scores for each of the sixteen experiments are listed below in Table 8.3.

Table 8.3: Mean values of COSII scores per experiment

Exp. no.	COSII	Exp. no.	COSII	Exp. no.	COSII	Exp. no.	COSII
1	2,81	5	3,27	9	3,15	13	3,00
2	3,30	6	3,28	10	3,17	14	3,39
3	2,85	7	3,34	11	3,17	15	3,67
4	3,27	8	3,65	12	3,33	16	3,65

8.2.3 Main constructs

The main constructs of S-E and POS were also measured in the questionnaire through measurement instruments based on established measurement instruments, as described in Section 7.13. The descriptive statistics for each of these constructs are discussed in more detail below.

8.2.3.1 Self-efficacy

The measurement instrument that was applied for the construct of S-E had a high level of internal consistency, as determined by a Cronbach's alpha of 0,86.

The mean value of the S-E scores for each of the 16 experiments is illustrated in a boxplot in Figure 8.8 below. Across the 16 experiments, the mean value of the S-E scores was 4,1 with a standard deviation of 0,54, and a range of 3,6 ($\bar{x} = 4,1$; $s = 0,54$; $1,4 \leq x \leq 5$).

In order to establish that the differences in mean S-E scores between the respective experiments were not due to how the participants had been assigned to the different experiments, a one-way ANOVA was conducted to determine if the mean S-E scores of the respective experiments showed a statistically significant difference at the 0,05 level of significance. It was found that the group means did not have a statistically significant difference $F(16, 408) = 0,661$, $p = 0,833$. It could thus be concluded that the S-E scores of participants were not influenced by the assignment of the participants to the different experiments.

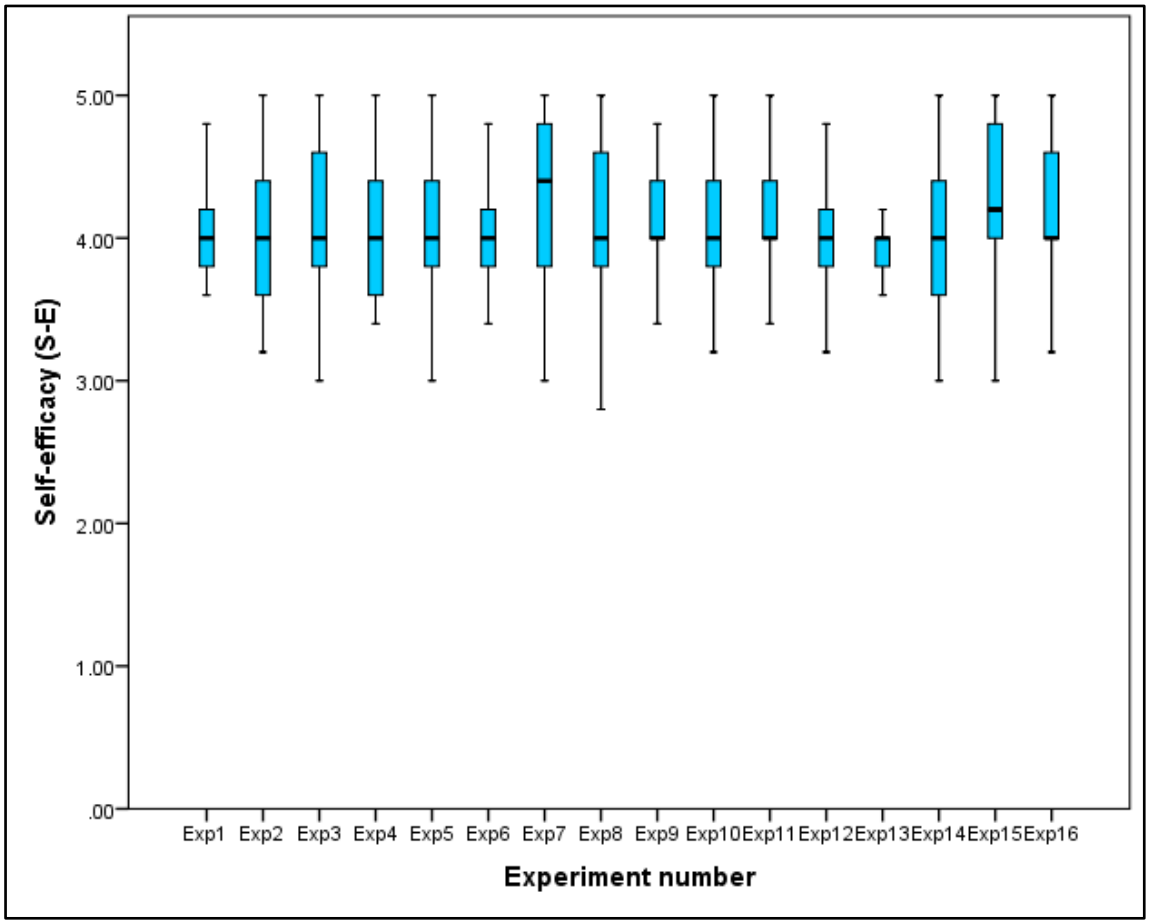

Figure 8.8: Boxplot of the mean values of S-E scores per experiment

Based on the overall mean value of S-E (4,1), it seems that participants in general had a fairly high assessment of their S-E, as a rating of 3 was termed “Neutral” and a rating of 4 was termed “Agree” on the Likert scale that was used (shown in Figure 7.11 in Section 7.13.1).

The mean values of the S-E scores for each of the 16 experiments are listed below in Table 8.4.

Table 8.4: Mean values for S-E scores per experiment

Exp. no.	S-E	Exp. no.	S-E	Exp. no.	S-E	Exp. no.	S-E
1	4,05	5	4,08	9	4,06	13	3,90
2	4,02	6	4,07	10	4,10	14	4,06
3	4,17	7	4,21	11	4,18	15	4,26
4	4,02	8	4,14	12	3,98	16	4,17

8.2.3.2 Perceived organisational support

The measurement instrument that was applied for the construct of POS had a high level of internal consistency, as determined by a Cronbach's alpha of 0,83.

The mean value of the POS scores for each of the 16 experiments is illustrated in a boxplot in Figure 8.9 below. Across the 16 experiments, the mean value of the POS scores was 3,22 with a standard deviation of 0,66 and a range of 4 ($\bar{x}$ = 3,22; s = 0,66; 1 ≤ x ≤ 5).

In order to establish that the differences in mean POS scores between the respective experiments were not due to how the participants had been assigned to the different experiments, a one-way ANOVA was conducted to determine if the mean POS scores of the respective experiments showed a statistically significant difference at the 0,05 level of significance. It was found that the group means did not have a statistically significant difference $F(16, 408) = 0,457$, $p = 0,965$. It could thus be concluded that the POS scores of participants were not influenced by the assignment of the participants to the different experiments.

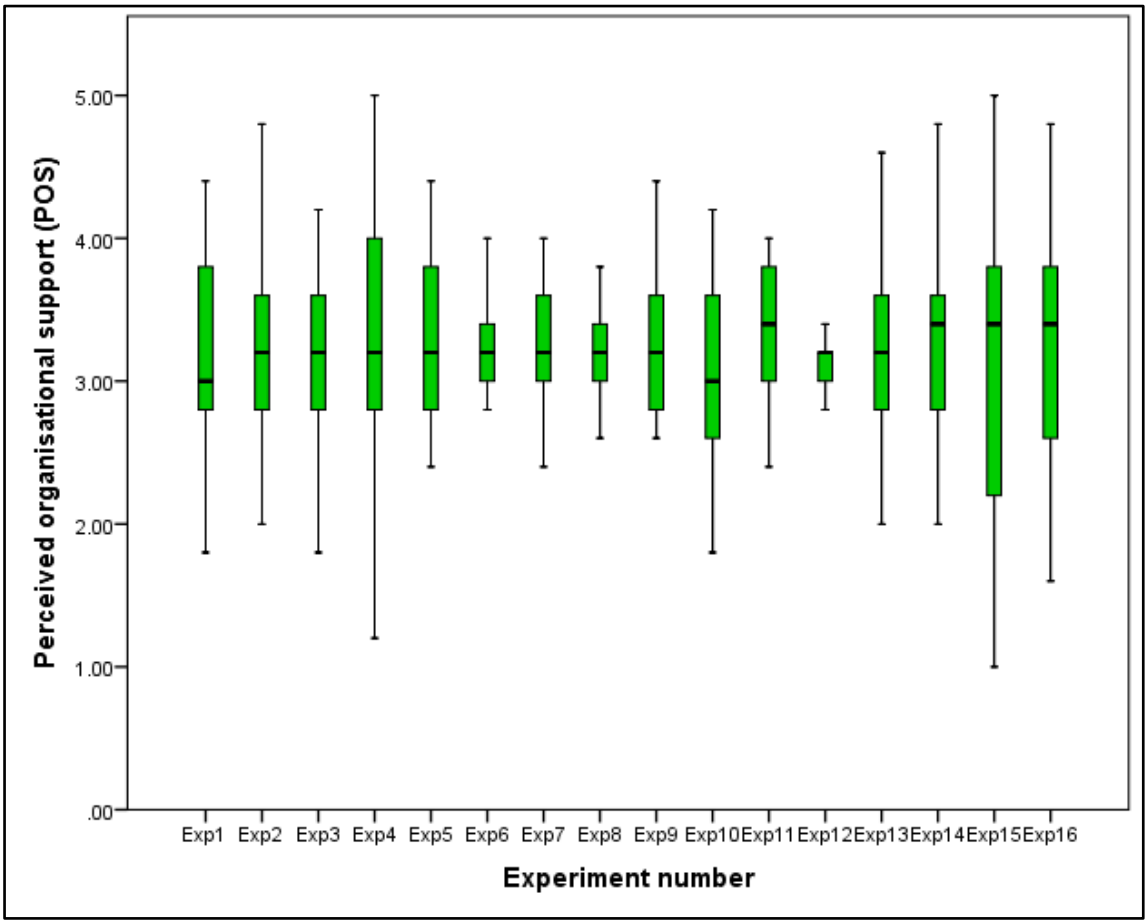

Figure 8.9: Boxplot of the mean values of POS scores per experiment

Based on the overall mean value of POS (3,22), it appears that participants generally had a slightly above average rating of POS in the organisation, as a rating of 3 was termed “Neutral” on the Likert scale that was used (shown in Figure 7.12 in Section 7.13.2). It could further be concluded, based on the range of the scores of 4, the highest for all the variables, that many different perceptions of POS existed amongst the participants.

The mean values of the POS scores for each of the 16 experiments are provided below in Table 8.5.

Table 8.5: Mean values for POS scores per experiment

Exp. no.	POS	Exp. no.	POS	Exp. no.	POS	Exp. no.	POS
1	3,22	5	3,26	9	3,30	13	3,18
2	3,23	6	3,19	10	3,09	14	3,28
3	3,14	7	3,28	11	3,39	15	3,08
4	3,29	8	3,24	12	3,18	16	3,27

8.2.4 Constant variables

The variables Communication and Inquisitiveness were associated with the main construct of S-E. These variables were not manipulated as part of the experiment, and were thus regarded as constants in this study. The descriptive statistics for each of these variables are discussed in more detail below.

8.2.4.1 Communication

The measurement instrument that was applied for Communication had a high level of internal consistency, as determined by a Cronbach's alpha of 0,83.

The mean values of the Communication scores for each of the 16 experiments are illustrated in a boxplot in Figure 8.10 below. Across the 16 experiments, the mean value of the Communication scores was 3,91 with a standard deviation of 0,52 and a range of 3,75 ($\overline{x}$ = 3,91; s = 0,523; 1,25 ≤ x ≤ 5).

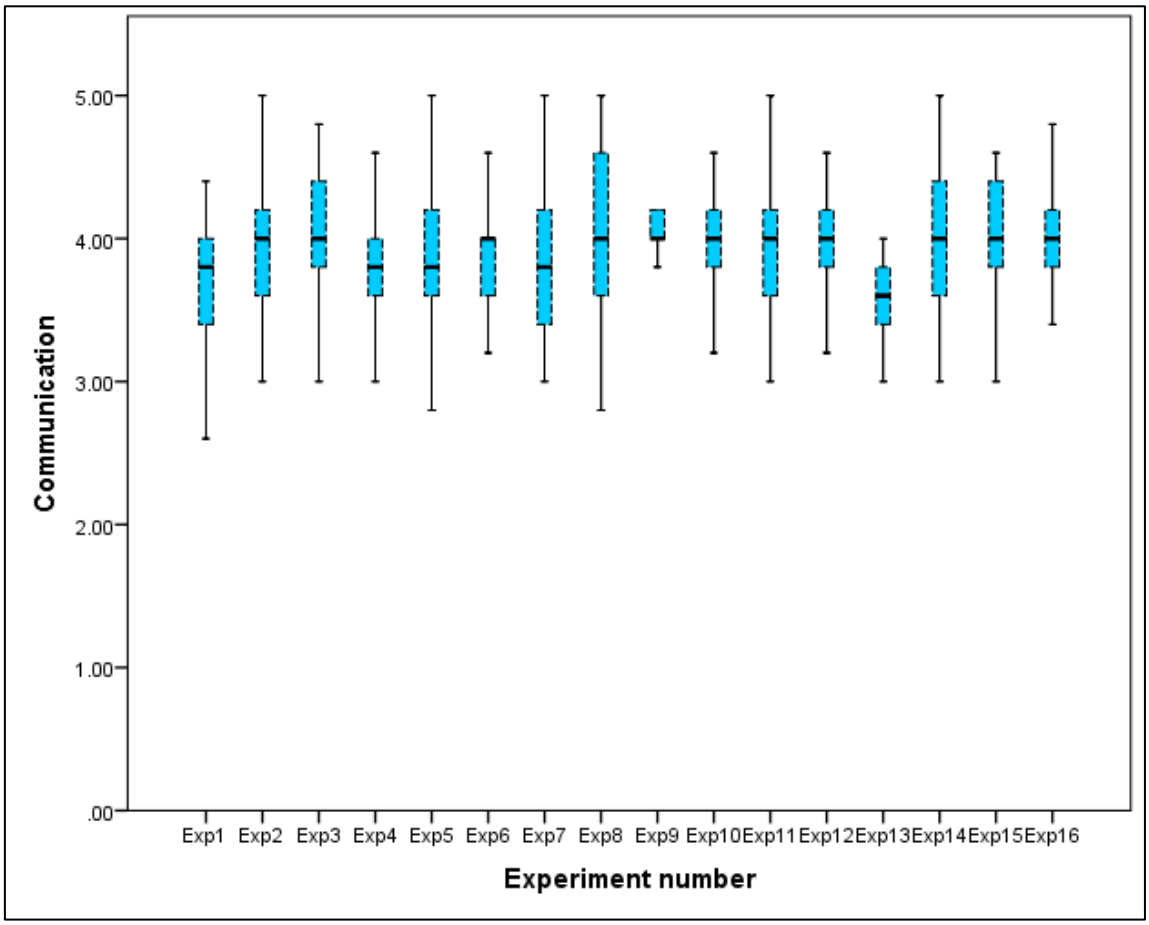

Figure 8.10: Boxplot of the mean values of Communication scores per experiment

Based on the overall mean value of Communication (3,91), it seems participants in general had a fairly high assessment of their interpersonal communication competence, as a rating of 3 was termed “Neutral” and a rating of 4 was termed “Agree” on the Likert scale that was used (shown in Figure 7.13 in Section 7.13.3).

The mean values of the Communication scores for each of the 16 experiments are listed below in Table 8.6.

Table 8.6: Mean values for Communication scores per experiment

Exp. no.	Communication	Exp. no.	Communication	Exp. no.	Communication	Exp. no.	Communication
1	3,76	5	3,89	9	3,94	13	3,56
2	3,91	6	3,90	10	3,98	14	4,01
3	3,97	7	3,90	11	3,93	15	3,98
4	3,76	8	4,06	12	3,98	16	4,02

8.2.4.2 Inquisitiveness

The measurement instrument that was applied for Inquisitiveness had a high level of internal consistency, as determined by a Cronbach's alpha of 0,84.

The mean values of the Inquisitiveness scores for each of the 16 experiments are illustrated in a boxplot in Figure 8.11 below. Across the 16 experiments, the mean value of the Inquisitiveness scores was 4,23 with a standard deviation of 0,53, and a range of 3,6 ($\overline{x}$ = 4,23; s = 0,53; 1,4 ≤ x ≤ 5).

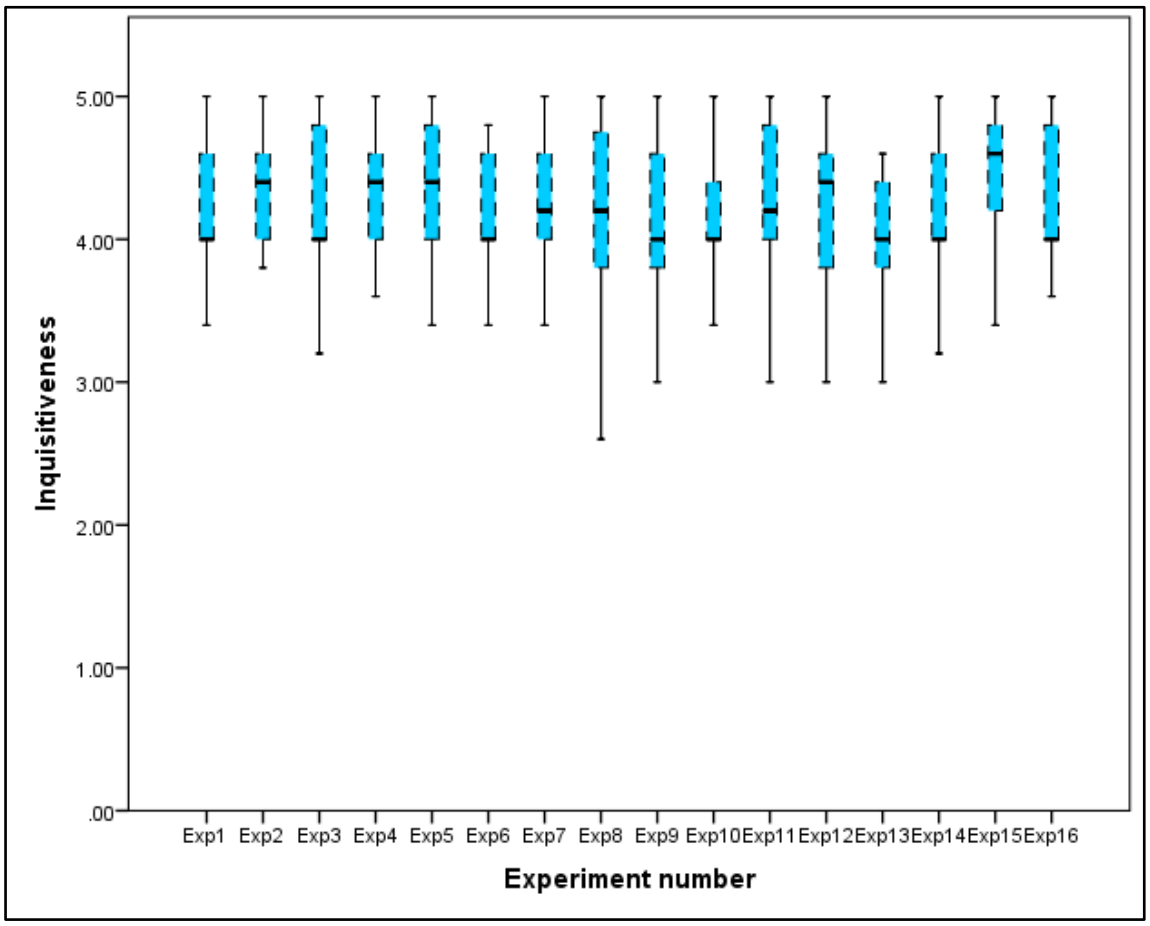

Figure 8.11: Boxplot of the mean values of Inquisitiveness scores per experiment

Based on the overall mean value of Inquisitiveness (4,23), it seems that participants in general had a high assessment of their level of curiosity, as a rating of 4 was termed “Agree” and a rating of 5 was termed “Strongly Agree” on the Likert scale that was used (shown in Figure 7.14 in Section 7.13.4).

The mean values of the Inquisitiveness scores for each of the 16 experiments are listed below in Table 8.7.

Table 8.7: Mean values for Inquisitiveness scores per experiment

Exp. no.	Inquisitiveness	Exp. no.	Inquisitiveness	Exp. no.	Inquisitiveness	Exp. no.	Inquisitiveness
1	4,19	5	4,28	9	4,15	13	3,96
2	4,34	6	4,14	10	4,18	14	4,18
3	4,27	7	4,27	11	4,30	15	4,45
4	4,23	8	4,20	12	4,21	16	4,27

8.2.5 Independent variables of factorial experiment

The independent variables for the factorial experiment that were identified in Phase One, were Preparedness (associated with the S-E construct), and Active listening, Managerial confidence and Consultation (associated with the POS construct).

The definitions of these variables were disclosed in Section 6.7 and the treatment of the variables for purpose of the experiment were discussed in Section 7.3.5.

To recap, a graphical representation of the manipulation of the independent variables and the corresponding value of COSII for each experiment is provided in Figure 8.12, with 0 representing a low treatment level for the variable, and 1 representing a high treatment level for the variable.

Exp #	P	AL	MC	C	COSII
1	0	0	0	0	2,81
2	0	0	0	1	3,30
3	0	0	1	0	2,85
4	0	0	1	1	3,27
5	0	1	0	0	3,27
6	0	1	0	1	3,28
7	0	1	1	0	3,34
8	0	1	1	1	3,65
9	1	0	0	0	3,15
10	1	0	0	1	3,17
11	1	0	1	0	3,17
12	1	0	1	1	3,33
13	1	1	0	0	3,00
14	1	1	0	1	3,39
15	1	1	1	0	3,67
16	1	1	1	1	3,65

Figure 8.12: Treatment of the independent variables per experiment

The purpose of manipulating the independent variables in the experiment was to produce an effect on the dependent variable. Thus, examination of the scores of the dependent variable in relation to the treatment level of the independent variables was also warranted. The mean values of the

scores of the dependent variable (COSII) in relation to the respective high and low values of the independent variables are graphically displayed in Figure 8.13.

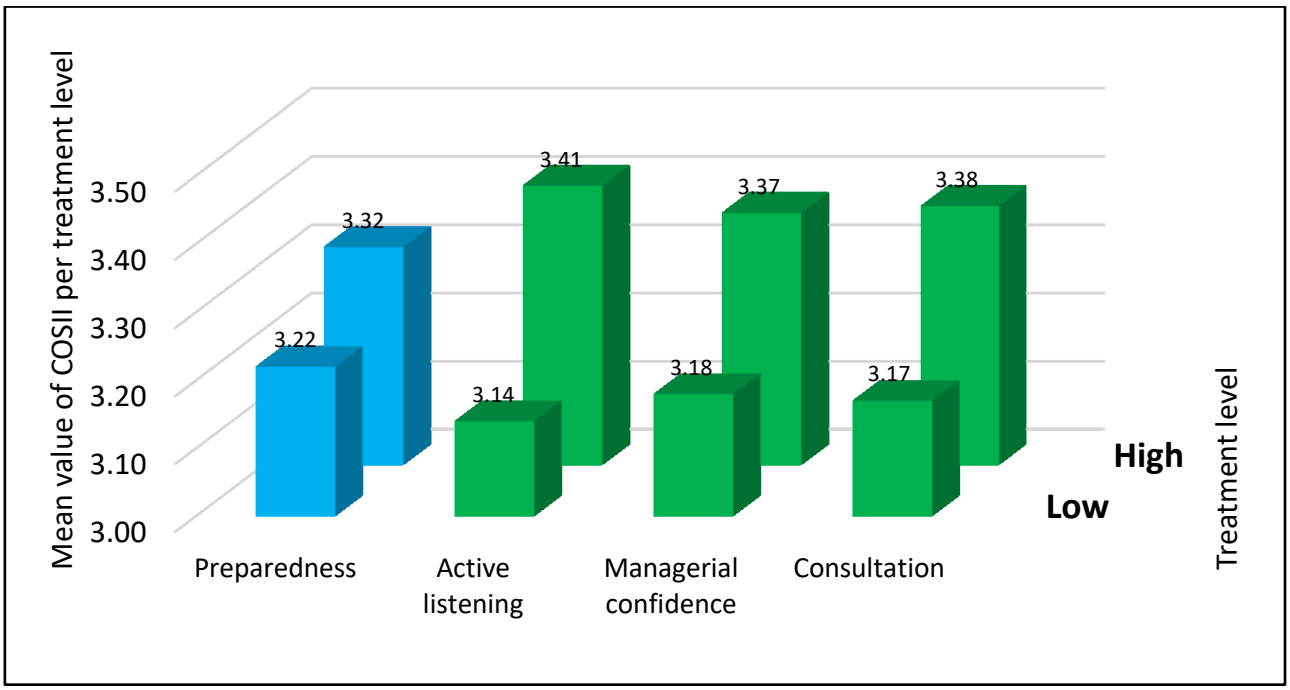

Figure 8.13: Mean value of COSII scores for high and low values of the independent variables

From the presentation of the data in Figure 8.13, it is evident that for the low levels of the independent variables, the scores of the dependent variable (COSII) were also low, and for the high levels of the independent variables, the scores of the dependent variable (COSII) were also high. Therefore, it seems fair to conclude that the treatment of the independent variables had an effect on the dependent variable, COSII.

The mean values from all the experiments of the dependent variable (COSII) for the high and low values of the four manipulated independent variables (Preparedness, Active listening, Managerial confidence, Consultation) are provided in Table 8.8 below.

Table 8.8: Mean value of COSII for high and low values of the independent variables

	Preparedness	**Active listening**	**Managerial confidence**	**Consultation**
Low	3,22	3,14	3,18	3,17
High	3,32	3,41	3,37	3,38

8.2.6 Summary of the realised sample

In summary, Figure 8.14 below provides a graphical representation of the mean values for each of the measured variables and constructs for each experiment.

On inspection of Figure 8.14, it is evident that there were no unusual values in any of the experiments, and except for COSII that was supposed to be influenced by the experimental treatments, all of the variables' standard deviations were below 0,67. Thus, it appears that the measurement of the variables can be regarded as reliable, and, as confirmed above in Section 8.2.2, it seems plausible that the experimental treatments had an effect on the dependent variable, COSII.

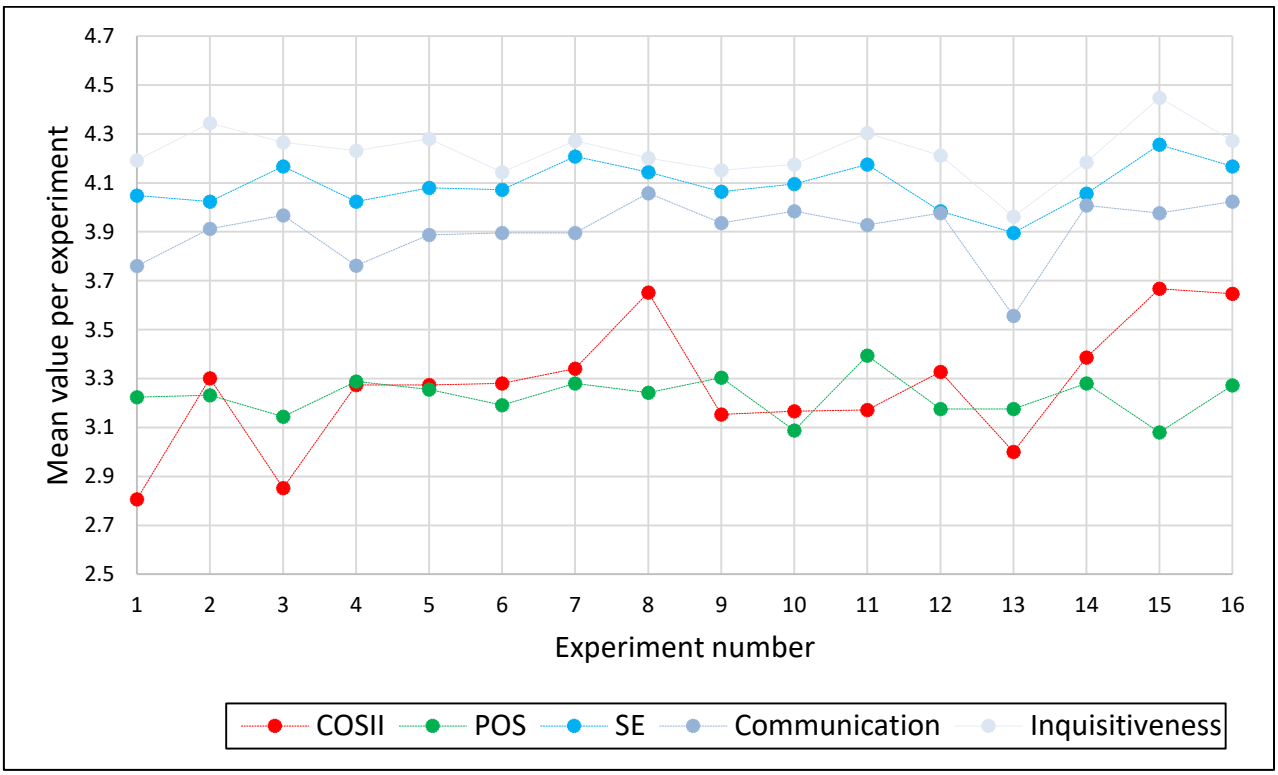

Figure 8.14: Mean values of measured variables and constructs per experiment

Table 8.9 below lists the means, standard deviations and ranges across all the experiments (N = 425) for the measurements of the dependent variable (COSII) as well as for POS, S-E, Communication and Inquisitiveness.

Table 8.9: Overall mean values for COSII, POS, S-E, Communication and Inquisitiveness

	N	Mean	Std. deviation	Range
COSII	425	3,27	0,83	4
S-E	425	4,10	0,54	3,6
POS	425	3,22	0,66	4
Communication	425	3,91	0,52	3,75
Inquisitiveness	425	4,23	0,53	3,6

The results of the statistical tests that were applied to analyse the data and the conclusions based on these results are presented in the next section.

8.3 RELATIONSHIPS BETWEEN IDENTIFIED VARIABLES AND THE CONSTRUCTS OF S-E AND POS

The hypotheses based on the expected relationships between Communication, Inquisitiveness and S-E were stated in Table 7.9 in Section 7.8.1; and the hypotheses based on the expected relationships between S-E and POS and the chance of successfully implementing an idea (COSII) were stated in Table 7.10 in Section 7.8.2.

The relationships between the respective variables and constructs mentioned above were theorised in the preceding chapters, and the nature (positive or negative) and extent (the degree of influence) of these (theoretical) relationships had to be established at the outset, before further analysis could be pursued. Hence, the SEM technique was applied initially to assess the proposed relationships between Communication, Inquisitiveness and S-E; and between POS, S-E and COSII.

Hair, Black, Babin, Anderson and Tatham (2006: 653) argued that SEM has become a popular multivariate approach, as it presents researchers with a conceptually attractive way to test theory. If a researcher is able to express a given theory in terms of relationships among measured variables and latent constructs (variates), then SEM can be used to measure how well the theory fits the reality represented by the collected data (Hair *et al*., 2006: 653), which was the purpose of using SEM in this case.

8.3.1 The SEM measurement model

In SEM terminology, the measurement model for the relevant constructs was developed for this study by first identifying the latent variables (i.e. the variables and constructs identified through the literature review and the investigation in Phase One) and then assigning measurement variables (i.e. the questionnaire items) to each of them. These measurement variables are the so-called indicators in the measurement model, as they are used to measure (indicate) the latent variables.

Unlike the process of exploratory factor analysis, where a researcher has no power over which variables define a given factor, the measurement model is confirmatory in nature, as the researcher is able to specify those questionnaire items that define the different latent variables. The measurement model developed for this study is depicted in Figure 8.15 below.

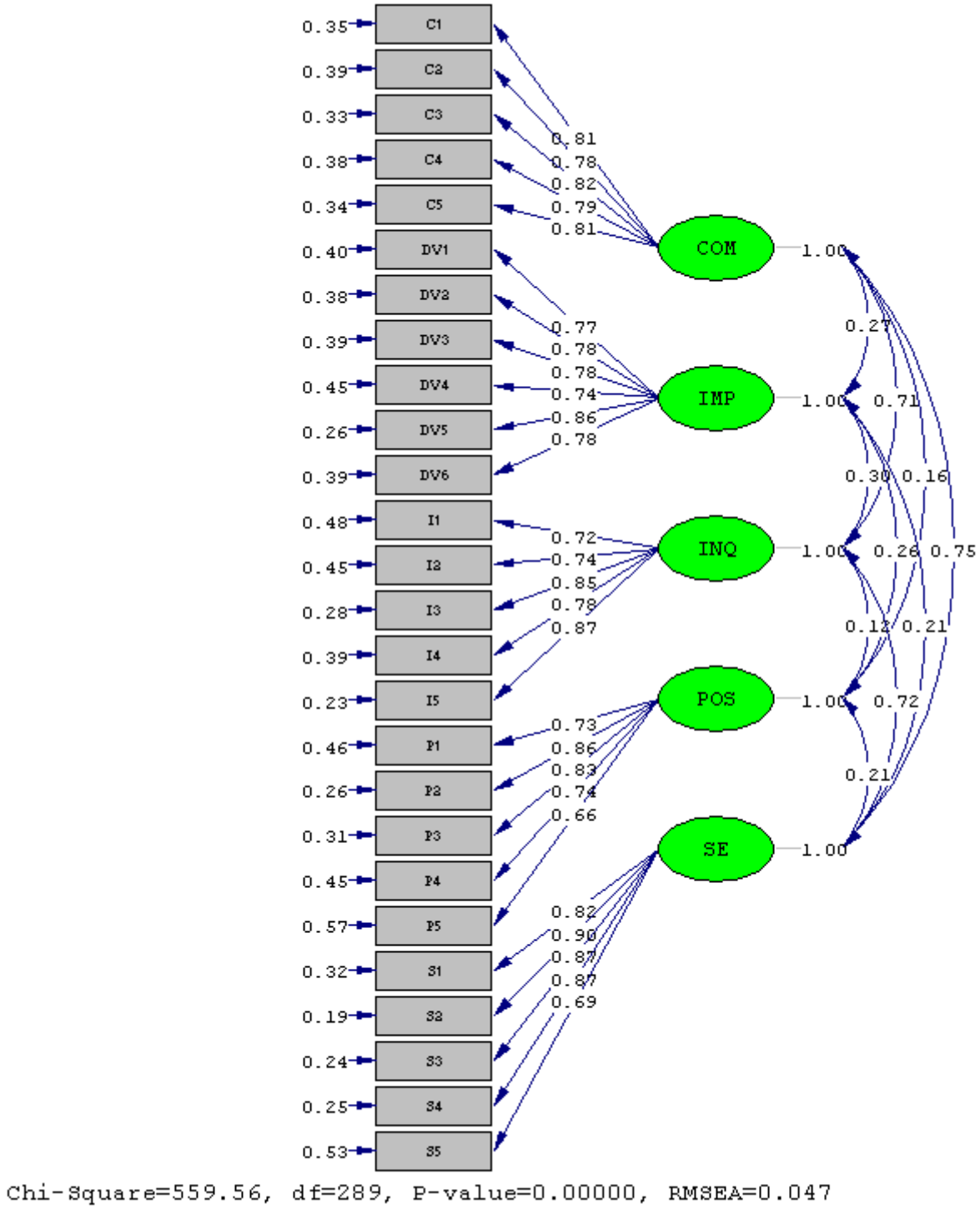

Figure 8.15: SEM measurement model

As Hair *et al*. (2006: 658) recommended the use of covariances, this data type was used in the SEM analyses. Because of this choice of data type, an analysis of the asymptotic covariance matrix was conducted.

Goodness-of-fit measures are used to compare theory to reality by assessing the similarity of an estimated covariance matrix (the theory) to an observed covariance matrix (the reality). The closer the values between the observed covariance matrix and the estimated covariance matrix, the better the model fit (Hair *et al*., 2006: 665).

The first step was therefore to calculate the goodness-of-fit index (GFI) for the measurement model proposed for this study.

Model fit was measured for this study by means of a range of fit indices, including the Chi-square and the root mean square error of approximation (RMSEA). For the RMSEA, MacCallum, Browne and Sugawara (1996: 142) suggested that a RMSEA value of between 0.00 and 0.05 indicates a close model fit, a value of between 0.05 and 0.08 a reasonable fit, and a value of more than 0.08 a poor model fit. The results for the model fit are displayed in Table 8.10 below.

Table 8.10: The goodness-of-fit indices for the SEM measurement model

Index measure	Value
Sample size	425
Degrees of freedom	289
Root mean square error of approximation (RMSEA)	0,047
90 percent confidence interval for RMSEA	(0,041 ; 0,053)
Expected cross-validation index (ECVI)	1,62
Santorra-Bentler scaled Chi-square	559,56
Goodness of fit index	0,98

Based on the GFI (0,98) and the root mean square error of approximation (0,047) for the sample on the measurement model illustrated in Figure 8.15, the conclusion is drawn of a close fit for this model.

The indices provided above were calculated for the SEM measurement model (Figure 8.15). In this model, only relationships between the manifested variables and their associated latent constructs were stipulated. No relationships between different constructs were stipulated, as these are addressed in the structural model, which is discussed in the following section.

8.3.2 The SEM structural model

After the measurement model had been developed, a structural model was specified by assigning relationships from one construct to the other based on the proposed theoretical models, i.e. the hypotheses stated in Section 7.8.1 and Section 7.8.2. The structural model is displayed in Figure 8.16 below. The aim was to assess the dependence relationships among the different constructs.

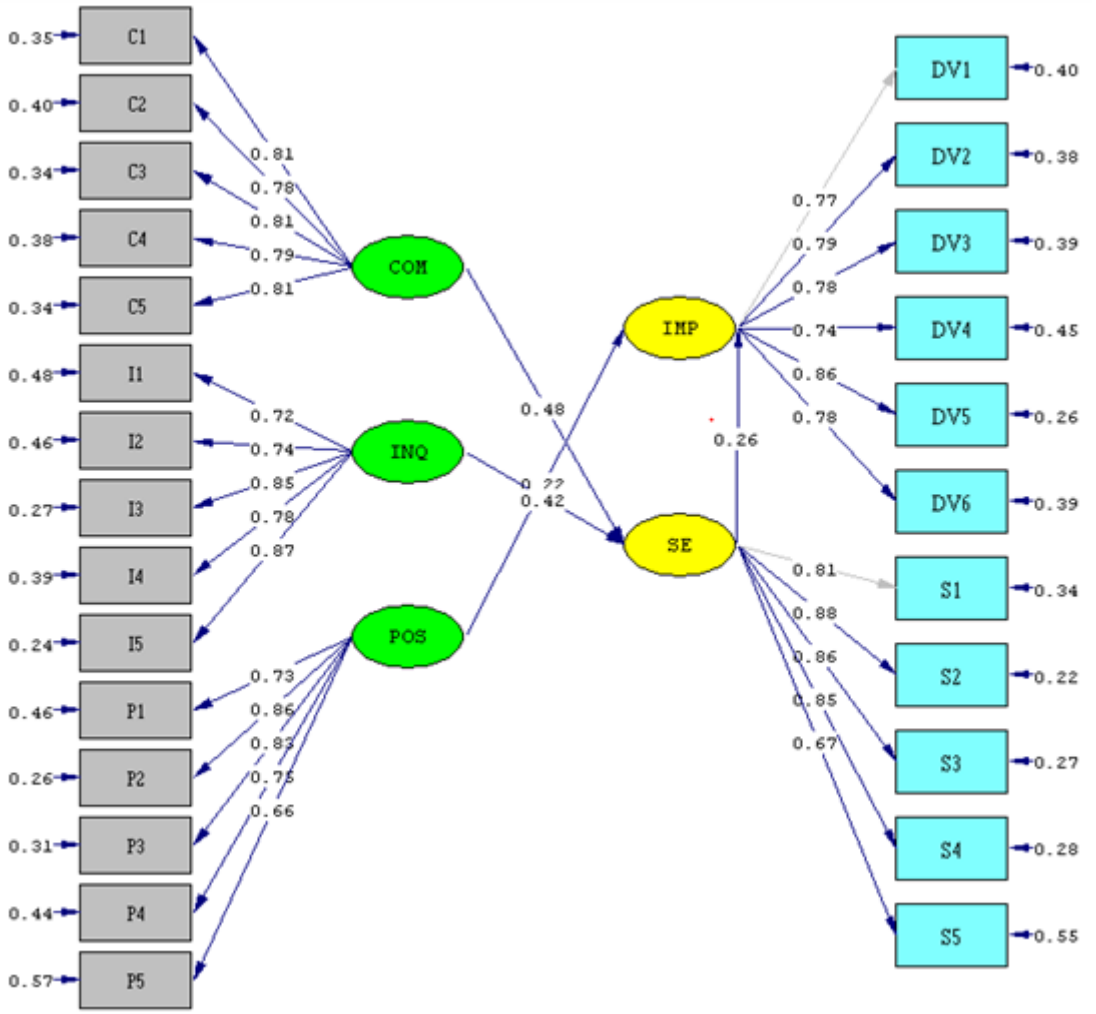

Figure 8.16: SEM structural model

A summary of the empirical results of the SEM analysis conducted for the sample is provided in Table 8.11 below.

Table 8.11: Empirical results of the SEM analysis

Path	t-value	Path coefficient	p-value
Communication ⟶ S-E	8,77	0,48	0,05
Inquisitiveness ⟶ S-E	7,32	0,42	0,06
POS ⟶ Implementation	5,14	0,22	0,04
S-E ⟶ Implementation	4,30	0,26	0,06

Based on the SEM analysis, the following interpretations were made for each of the relationships in the model:

- For the relationship between Communication and S-E, the results indicate a positive relationship between Communication and S-E. The t-value of 8,77 indicates support on the 0,05 significance level, while the corresponding path coefficient was 0,48. The assumption can therefore be made that the higher the levels of Communication reported by the respondents, the higher the levels of S-E would be.
- For the relationship between Inquisitiveness and S-E, the results indicate a positive relationship between Inquisitiveness and S-E. The t-value of 7,32 indicates support on the 0,10 significance level, while the corresponding path coefficient was 0,42. The assumption can therefore be made that the higher the levels of Inquisitiveness reported by the respondents, the higher the levels of S-E would be.
- For the relationship between POS and COSII, the results indicate a positive relationship between POS and COSII. The t-value of 5,14 indicates support on the 0,05 significance level, while the corresponding path coefficient was 0,22. The assumption can therefore be made that the higher the levels of POS reported by the respondents, the higher the chance of successful idea implementation would be.
- For the relationship between S-E and COSII, the results indicate a positive relationship between S-E and COSII. The t-value of 4,30 indicates support on the 0,10 significance level, while the corresponding path coefficient was 0,26. The assumption can therefore be made that the higher the levels of S-E reported by the respondents, the higher the chance of successful idea implementation would be.

The reported empirical results are graphically depicted in Figure 8.16 above.

To assess the extent to which the proposed model represents an acceptable approximation of the data, the fit indices had to be considered. The same fit indices were used to assess the construct validity of the structural model as were used for the measurement model. The fit indices for the structural model are listed in Table 8.12.

Table 8.12 Goodness-of-fit indices for the SEM structural model

Index measure	Value
Sample size	425
Degrees of freedom	292
Root mean square error of approximation (RMSEA)	0,048
90 percent confidence interval for RMSEA	(0,042; 0,054)
Expected cross-validation index (ECVI)	1,64
Santorra-Bentler scaled Chi-square	577,59
Goodness of fit index	0,98
X^2/df	1,98

The Santorra-Bentler, Chi-square/degree of freedom ratio (1,98), as well as the root mean square error of approximation (0,048) for the sample on the structural model illustrated in Figure 8.16 indicates an acceptable fit for this model. The RMSEA of 0,048 falls within the range of a close fit of between 0 and 0,05.

From these results it could be concluded that positive relationships existed between the variables and constructs as proposed in the associated hypotheses, and consequently the proposed relationships in the model would be a useful approximation of reality, and a reasonable explanation of the trends in the data. Thus, further analysis of the proposed relationships between the constructs and variable were justified.

8.3.3 Relationship between Communication and S-E

The variable, “Communication”, was measured with an instrument developed for Internal Communication Competence (Bubas, 2001: 572). The measurement instrument required respondents to indicate the extent of agreement with five corresponding statements on a five-point Likert type scale (1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree).

The hypotheses related to Communication refer to a “high” and a “low” rating for the variable. Consequently, for the purpose of the statistical tests involving Communication, a participant’s score for Communication of below 4 on the Likert scale was taken as a “low” rating, and a participant’s score for Communication of 4 and higher on the Likert scale was taken as a “high” rating.

The participants’ scores for Communication were then sorted into two groups, namely a group including all the participants with a low rating, i.e. a score of less than 4 (“ComLow”); and a group including all the participants with a high rating, i.e. a score of 4 and higher (“ComHigh”).

After a positive relationship between Communication and S-E had been confirmed with SEM, an independent samples t-test was used to determine if there is a difference in S-E scores between the group including people with a low rating of Communication (ComLow) and the group including people with a high rating of Communication (ComHigh).

Data is a mean ± standard deviation, unless otherwise stated. There were 180 participants in the group which scored Communication low (ComLow), and 245 participants in the group which scored Communication high (ComHigh).

The S-E score was higher for the ComHigh group (4,316 ± 0,493) than for the ComLow group (3,791 ± 0,459). A statistically significant difference of 0,525 ± 0,047 [mean ± standard error], $t(400{,}198) = -11{,}291$, $p < 0{,}005$. Concerning the statistical null hypotheses as stated in Table 7.9 in Section 7.8.1, there was a statistically significant difference between means ($p < 0{,}05$), and therefore, the null hypothesis can be rejected. Consequently, based on the results of the independent samples t-test, one could conclude that people who view themselves as good communicators are more likely to also have higher S-E.

A linear regression was run to further investigate the effect of Communication on S-E. To assess linearity a scatterplot of Communication against S-E with a superimposed regression line was plotted. The results of the regression are provided in Table 8.13, and the scatterplot is displayed in Figure 8.17. Visual inspection of the scatterplot indicated a linear relationship between Communication and S-E.

Table 8.13: Regression of Communication and S-E

Model summary				Anova	Coefficients		
R	**R Square**	**Adjusted R Square**	**Durbin-Watson**	**F (df)**	**B**	**Beta**	**t**
Dependent variable: S-E							
0,635	0,403	0,402	2,312	285,982* (1)			
Constant					1,514		9,840*
Communication					0,660	0,635	16,911*

*Significant at the 0,05 level

From Table 8.13 it is apparent that Communication statistically significantly predicted S-E, $F(1, 423) = 285{,}982$, $p < 0{,}0005$. Communication accounted for 40,3 percent of the variation in S-E with adjusted $R^2 = 40{,}2$ percent.

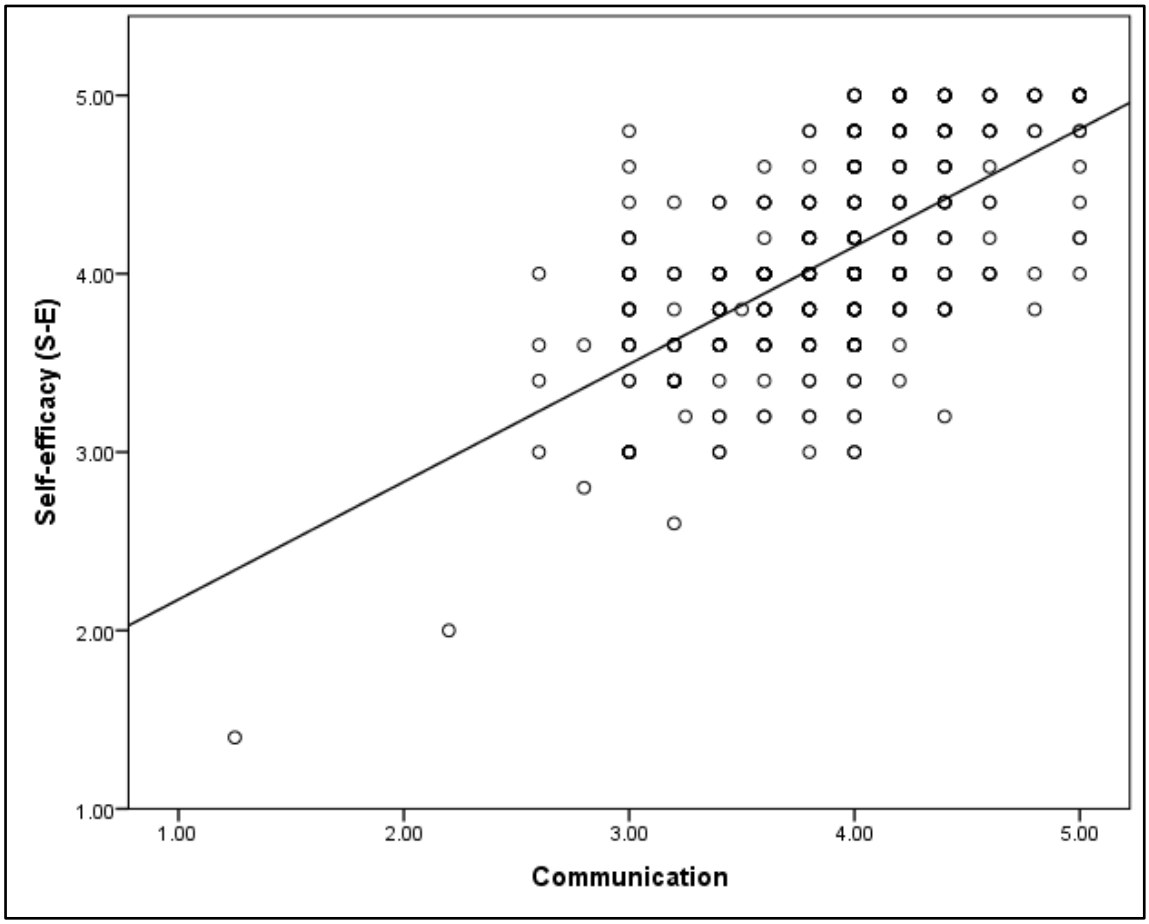

Figure 8.17: Scatterplot of Communication against S-E

Based on the results of the linear regression, it could further be concluded that a positive relationship exists between Communication and S-E, and that changes in S-E are related to changes in Communication. In other words, it seems possible that if a person's interpersonal communication competence improves, their S-E will also increase.

8.3.4 Relationship between Inquisitiveness and S-E

The variable, "Inquisitiveness", was measured with an adaptation of the "Work-Related Curiosity Scale" developed by Mussel *et al*. (2012: 111). The measurement instruments entailed that respondents indicate the extent of agreement with five corresponding statements on a five-point Likert type scale (1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree).

The hypotheses related to Inquisitiveness refer to a "high" and a "low" rating for the variable. Consequently, for the purpose of the statistical tests involving Inquisitiveness, a participant's score for Inquisitiveness of below 4 on the Likert scale was taken as a "low" rating, and a participant's score for Inquisitiveness of 4 and higher on the Likert scale was taken as a "high" rating.

The participants' scores for Inquisitiveness were then sorted into two groups, namely a group including all the participants with a low rating, i.e. a score of less than 4 ("InqLow"); and a group including all the participants with a high rating, i.e. a score of 4 and higher ("InqHigh").

After a positive relationship between Inquisitiveness and S-E had been confirmed with SEM, an independent samples t-test was used to determine if there is a difference in S-E scores between the group including people with a low rating of Inquisitiveness (InqLow), and the group including people with a high rating of Inquisitiveness (InqHigh).

Data is a mean ± standard deviation, unless otherwise stated. There were 90 participants in the group which scored Inquisitiveness low (InqLow), and 335 participants in the group which scored Inquisitiveness high (InqHigh).

The mean S-E score was higher for the InqHigh group (4,202 ± 0,482) than for the InqLow group (3,689 ± 0,573). A statistically significant difference of 0,513 ± 0,059 [mean ± standard error], $t(423) = -8,607$, $p < 0,005$. Concerning the statistical null hypotheses as stated in Table 7.9 in Section 7.8.1, there was a statistically significant difference between means ($p < 0,05$), and therefore, the null hypothesis can be rejected. Consequently, based on the results of the independent samples t-test, one could conclude that people who view themselves as above average inquisitive are more likely to also have higher S-E.

A linear regression was run to further investigate the effect of Inquisitiveness on S-E. To assess linearity, a scatterplot of Inquisitiveness against S-E with a superimposed regression line was plotted. The results of the regression are provided in Table 8.14, and the scatterplot is displayed in Figure 8.18. Visual inspection of the scatterplot indicated a linear relationship between Inquisitiveness and S-E.

Table 8.14: Regression of Inquisitiveness and S-E

Model summary				Anova	Coefficients		
R	**R Square**	**Adjusted R Square**	**Durbin-Watson**	**F (df)**	**B**	**Beta**	**t**
Dependent variable: S-E							
0,6	0,360	0,358	2,248	237,916* (1)			
Constant					1,509		8,935*
Inquisitiveness					0,611	0,600	15,425*

*Significant at the 0,05 level

From Table 8.14 it is apparent that Inquisitiveness accounted for 36 percent of the variation in S-E with adjusted R^2 = 35,8 percent. Inquisitiveness statistically significantly predicted S-E, $F(1, 423)$ = 237,916, p < 0,0005.

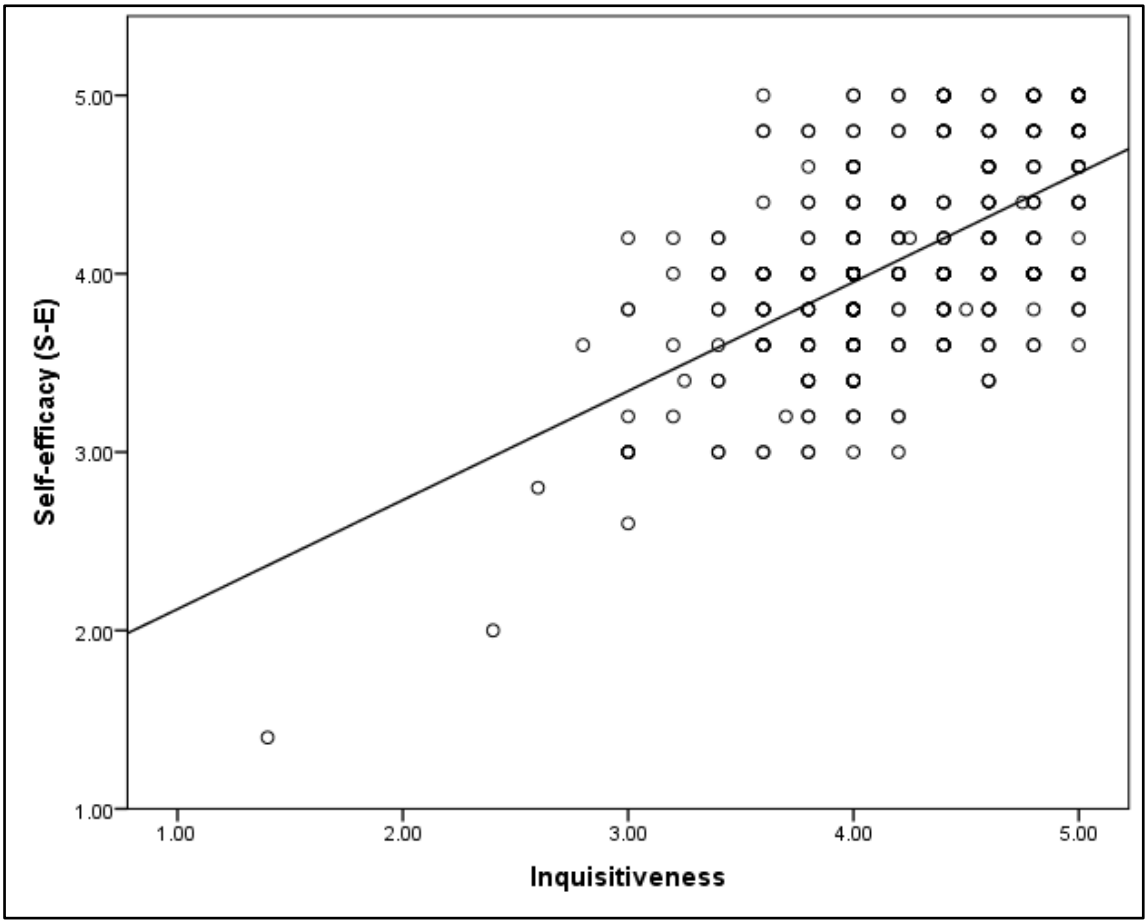

Figure 8.18: Scatterplot of Inquisitiveness against S-E

Based on the results of the linear regression, it could further be concluded that a positive relationship exists between Inquisitiveness and S-E, and that changes in S-E are related to changes in Inquisitiveness. In other words, it seems possible that if a person can become more inquisitive, their S-E could also increase.

8.3.5 Summary for the hypotheses based on the expected relationships between Communication, Inquisitiveness and S-E

Relating the results of the statistical tests back to the hypotheses (Table 7.9 in Section 7.8.1), provided the results in Table 8.15 below.

Table 8.15: Results for hypotheses based on the expected relationships between Communication, Inquisitiveness and S-E

Hypotheses	Description	P	Result	α	Decision	Reference
O2H1: $H_{(Com - SE)}$	People with a high rating of Communication (ComHigh) are more likely to have a high rating of S-E than people with a low rating of Communication (ComLow).	0.000	<	0,05	Reject H_0^{O2H1}	Section 8.3.3
O2H2: $H_{(Inq - S\text{-}E)}$	People with a high rating of Inquisitiveness (InqHigh) are more likely to have a high rating of S-E than people with a low rating of Inquisitiveness (InqLow).	0.000	<	0,05	Reject H_0^{O2H2}	Section 8.3.4

It could thus be concluded that an individual's perception of interpersonal communication competence in the work environment has a positive influence on the individual's S-E, and also that an individual's perceived level of inquisitiveness is positively related to the individual's S-E. In other words, people who perceive themselves as good communicators and as being inquisitive in nature, will in all probability have high S-E as well. It also seems likely that an increase in interpersonal communication competence will have a positive effect on S-E, and by the same token, if a person becomes more inquisitive, S-E will be influenced positively.

8.4 RELATIONSHIPS BETWEEN S-E, POS AND COSII

The results of the statistical tests for the hypotheses related to the main constructs of S-E and POS and COSII, as listed in Table 7.10 in Section 7.8.2, are disclosed in this section.

S-E and POS were measured using established measuring instruments and respondents indicated the extent of agreement with five corresponding statements on a five-point Likert-type scale (1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree).

The hypotheses related to S-E and POS refer to a high and a low rating for the respective variables. Consequently, for the purpose of the statistical tests involving these variables, a participant's score of below 4 on the Likert scale was taken as a "low" rating, and a participant's score of 4 and higher on the Likert scale was taken as a "high" rating.

The participants' scores for S-E and POS respectively were then sorted into two groups, namely a group including all the participants with a low rating, i.e. a score of less than 4 ("POSLow" / "S-

ELow"); and a group including all the participants with a high rating, i.e. a score of 4 and higher ("POSHigh" / "S-EHigh").

8.4.1 Relationship between S-E and COSII

After a positive relationship between S-E and COSII had been confirmed with SEM, an independent samples t-test was used to determine if there is a difference in mean scores for COSII between the group including people with a low rating of S-E (S-ELow), and the group including people with a high rating of S-E (S-EHigh).

Data is a mean ± standard deviation, unless otherwise stated. There were 141 participants in the group which scored S-E low (S-ELow), and 284 participants in the group which scored S-E high (S-EHigh).

The mean COSII score was higher for the S-EHigh group (3,346 ± 0,861) than for the S-ELow group (3,115 ± 0,742). A statistically significant difference of 0,231 ± 0,081 [mean ± standard error], $t(319{,}072) = -2{,}860$, $p = 0{,}005$. Concerning the statistical null hypotheses as listed in Table 7.10 in Section 7.8.2, there was a statistically significant difference between means ($p < 0.05$), and therefore, the null hypothesis can be rejected. Consequently, based on the results of the independent samples t-test, one could conclude that people with higher S-E are more likely to succeed in implementing their ideas in an organisation.

A linear regression was run to further investigate the effect of S-E on COSII. To assess linearity, a scatterplot of S-E against COSII with a superimposed regression line was plotted. The results of the regression are provided in Table 8.16, and the scatterplot is displayed in Figure 8.19. Visual inspection of the scatterplot indicated a linear relationship between S-E and COSII.

Table 8.16: Regression of S-E and COSII

Model summary				Anova	Coefficients		
R	**R Square**	**Adjusted R Square**	**Durbin-Watson**	**F (df)**	**B**	**Beta**	**t**
Dependent variable: COSII							
0,174	0,030	0,028	1,83	13,171* (1)			
Constant					2,184		7,244*
S-E					0,265	0,174	3,629*

*Significant at the 0,05 level

From Table 8.16 it is apparent that S-E accounted for three percent of the variation in COSII with adjusted R^2 = 2,8 percent. S-E statistically significantly predicted COSII $F(1, 423) = 13{,}171$, $p < 0{,}0005$.

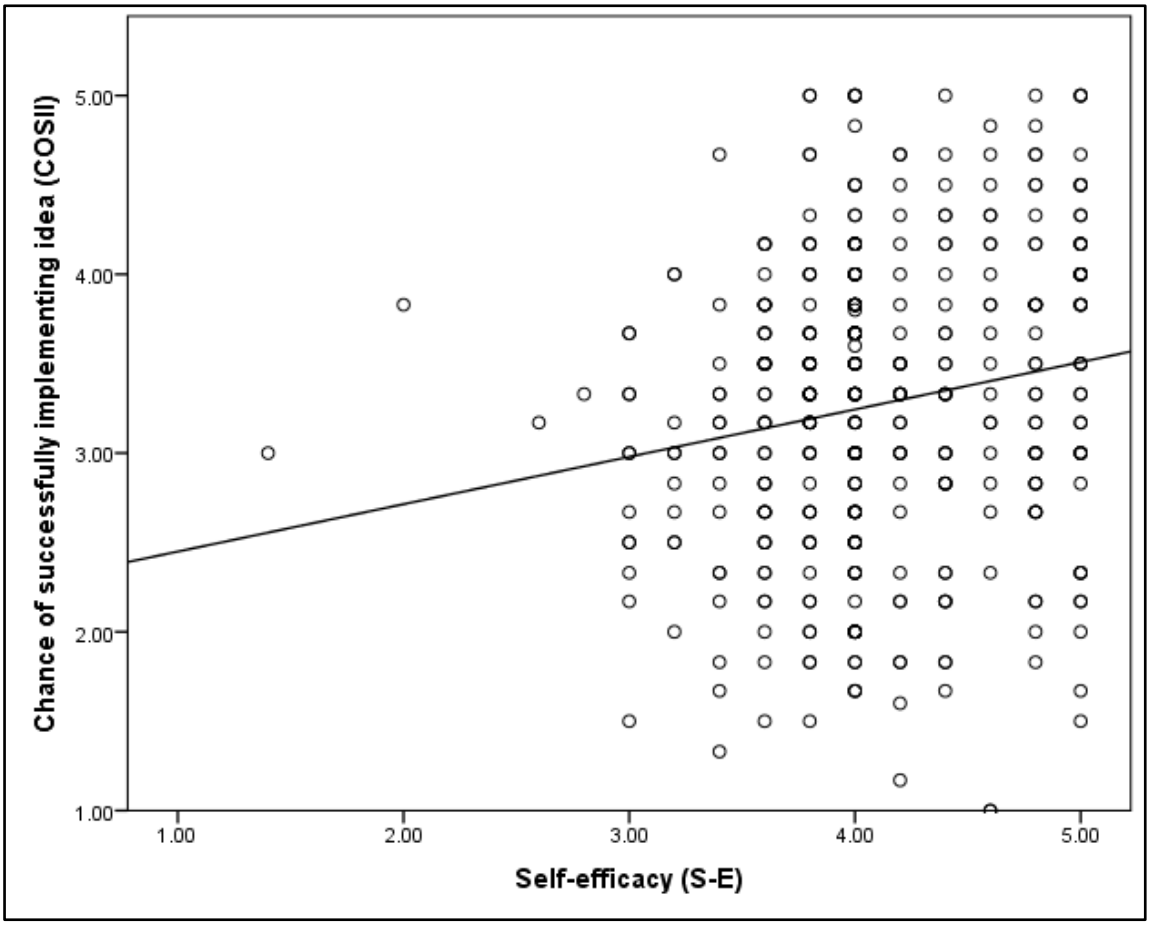

Figure 8.19: Scatterplot of S-E against COSII

Based on the results of the linear regression, it could further be concluded that a positive relationship exists between S-E and COSII, and that changes in COSII are related to changes in S-E. In other words, it seems possible that an increase in a person's S-E will have a positive effect on their attempt to implement ideas in an organisation.

While the R-squared measure provides an estimate of the strength of the relationship between S-E and COSII, it does not provide a formal hypothesis test for this relationship. The F-test of overall significance determines whether this relationship is statistically significant, and in this case, the regression model statistically significantly predicts the outcome variable.

Low R-squared values are problematic when precise predictions are required, and since the goal here was not to produce precise predictions, the low R-squared value was not a concern. The low R-squared value is probably an indication that there are many factors besides S-E which influence

idea implementation in an organisation and it would be challenging to construct a model which accurately predicts successful implementation based only on S-E. More variables could be added to the model if the objective is more precise predictions.

8.4.2 Relationship between POS and COSII

After a positive relationship between POS and COSII had been confirmed with SEM, an independent samples t-test was used to determine if there is a difference in mean scores for COSII between the group including people with a low rating of POS (POSLow), and the group including people with a high rating of POS (POSHigh).

Data is a mean ± standard deviation, unless otherwise stated. There were 359 participants in the group which scored POS low (POSLow), and 66 participants in the group which scored POS high (POSHigh).

The mean COSII score was higher for the POSHigh group (3,535 ± 0,733) than for the POSLow group (3,220 ± 0,838). A statistically significant difference of 0,315 ± 0,11 [mean ± standard error], $t(423) = -2,859$, $p = 0,004$. Concerning the statistical null hypotheses, as listed in Table 7.10 in Section 7.8.2, there was a statistically significant difference between means ($p < 0,05$), and therefore, the null hypothesis can be rejected. Consequently, based on the results of the independent samples t-test, one could conclude that people who perceive their organisation as supportive are more likely to succeed in implementing their ideas in an organisation.

A linear regression was run to further investigate the effect of POS on COSII. To assess linearity, a scatterplot of POS against COSII with a superimposed regression line was plotted. The results of the regression are provided in Table 8.17, and the scatterplot is displayed in Figure 8.20. Visual inspection of the scatterplot indicated a linear relationship between POS and COSII.

Table 8.17: Regression of POS and COSII

Model summary				Anova	Coefficients		
R	**R Square**	**Adjusted R Square**	**Durbin-Watson**	**F (df)**	**B**	**Beta**	**t**
Dependent variable: COSII							
0,229	0,052	0,050	1,84	23,367* (1)			
Constant					2,336		11,867*
POS					0,290	0,229	4,834*

*Significant at the 0,05 level

It is apparent from Table 8.17 that POS accounted for 5,2 percent of the variation in COSII with adjusted R^2 = 5 percent. POS statistically significantly predicted COSII $F(1, 423) = 23{,}367$, $p < 0{,}0005$.

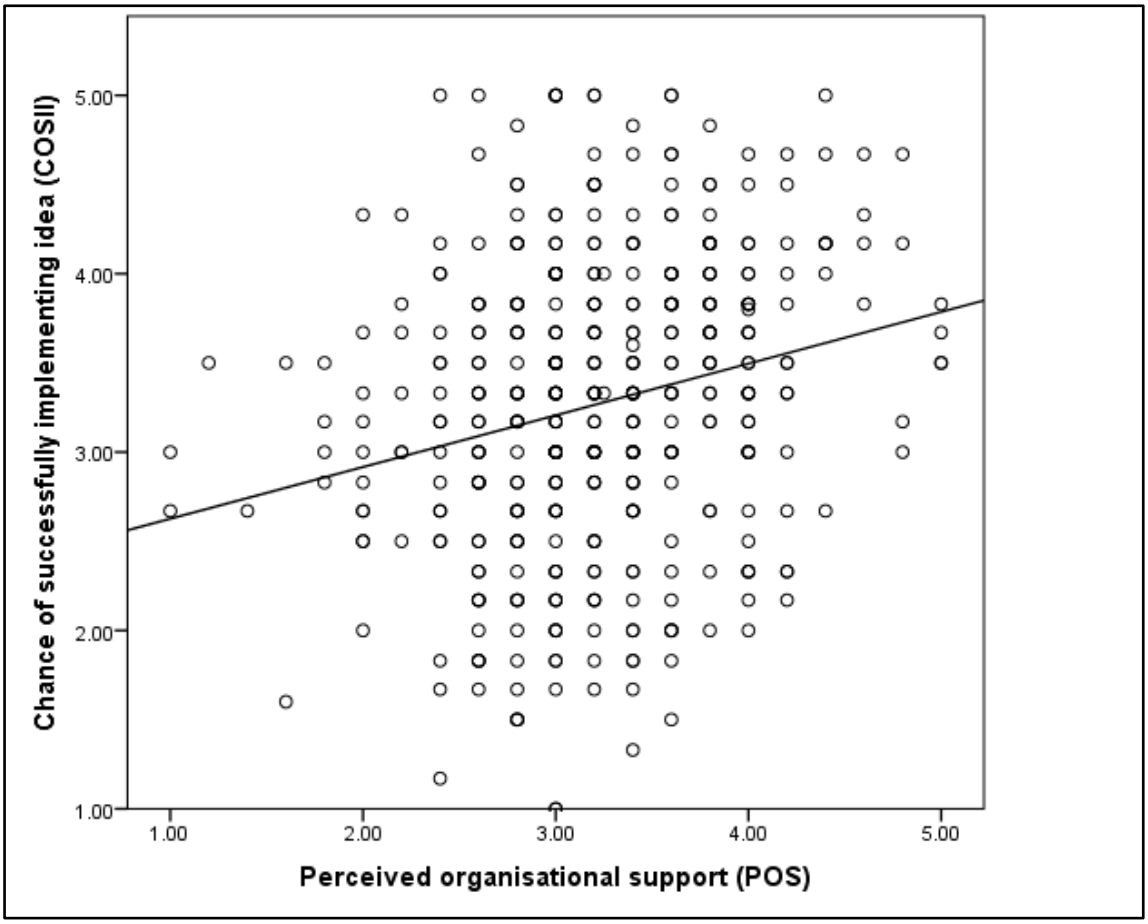

Figure 8.20: Scatterplot of POS against COSII

Based on the results of the linear regression, it could further be concluded that a positive relationship exists between POS and COSII, and that changes in COSII are related to changes in POS. In other words, it seems possible that an increase POS will have a positive effect on a person's endeavour to implement ideas in an organisation.

While the R-squared measure provides an estimate of the strength of the relationship between POS and COSII, it does not provide a formal hypothesis test for this relationship. The F-test of overall significance determines whether this relationship is statistically significant, and in this case, the regression model statistically significantly predicts the outcome variable.

Low R-squared values are problematic when precise predictions are required, and since the goal here was not to produce precise predictions, the low R-squared value was not a concern. Similar to the findings of S-E, the low R-squared value is probably an indication that there are many factors

besides POS which influence idea implementation in an organisation and it would be challenging to construct a model which accurately predicts successful implementation based only on POS. More variables could be added to the model if the objective is more precise predictions.

8.4.3 Summary for the hypotheses based on the expected relationships between S-E, POS and COSII

Relating the results of the statistical tests back to the hypotheses (Table 7.10 in Section 7.8.2), provided the results as shown in Table 8.18 below.

Table 8.18: Results for hypotheses based on the expected relationships between S-E, POS and COSII

Hypotheses	Description	P	Result	α	Decision	Reference
O3H1: $H_{(S\text{-}E - COSII)}$	People with a high rating of S-E (S-EHigh) are more likely to have a high rating of the chance of successfully implementing an idea than people with a low rating of S-E (S-ELow).	0.005	<	0,05	Reject H_0^{O3H1}	Section 8.4.1
O3H2: $H_{(POS - COSII)}$	People with a high rating of POS (POSHigh) are more likely to have a high rating of the chance of successfully implementing an idea than people with a low rating of POS (POSLow).	0.004	<	0,05	Reject H_0^{O3H2}	Section 8.4.2

It could thus be concluded that S-E and POS are positively related to a person's chances of successfully implementing ideas in an organisation. In other words, a person with high S-E is more likely to be successful at implementing an idea in an organisation than a person with low S-E. Similarly, a person who experiences high POS is more likely to be successful at implementing an idea in an organisation than a person who experiences low POS. Furthermore, it also seems likely that an increase in S-E and POS might possibly lead to more ideas being implemented in an organisation.

These results were anticipated, since the main premise of this study was that S-E and POS are key constructs in innovation in the context of IIB. Thus, it was expected that these constructs will have a positive impact on the chance of successfully implementing an idea in an organisation.

8.5 RELATIONSHIPS BETWEEN CONSTANTS AND COSII

The results of the statistical tests for the hypotheses related to Communication and Inquisitiveness and COSII are provided in this section.

It was explained above that the scores for each of these variables were sorted into two groups, namely a group including all the participants with a low rating (ComLow / InqLow, score of less than 4) and a group including all the participants with a high rating (ComHigh / InqHigh, score of 4 and more).

8.5.1 Relationship between Communication and COSII

An independent samples t-test was used to determine if there is a difference in the mean score for the dependent variable, COSII, between the group including people with a low rating of Communication (ComLow), and the group including people with a high rating of Communication (ComHigh).

Data is a mean ± standard deviation, unless otherwise stated. There were 180 participants in the group which scored Communication low (ComLow), and 245 participants in the group which scored Communication high (ComHigh).

The mean COSII score was higher for the ComHigh group (3,382 ± 0,847) than for the ComLow group (3,115 ± 0,781). A statistically significant difference of 0,267 ± 0,081 [mean ± standard error], $t(423) = -3,316$, $p = 0,001$. Concerning the statistical null hypotheses, as stated in Table 7.11 in Section 7.8.3, there was a statistically significant difference between means ($p < 0,05$), and therefore, the null hypothesis can be rejected. Consequently, based on the results of the independent samples t-test, one could conclude that people who view themselves as good communicators are more likely to succeed in implementing their ideas in an organisation.

A linear regression was run to further investigate the effect of Communication on COSII. To assess linearity, a scatterplot of Communication against COSII with a superimposed regression line was plotted. The results of the regression are provided in Table 8.19, and the scatterplot is displayed in Figure 8.21. Visual inspection of the scatterplot indicated a linear relationship between POS and COSII.

Table 8.19: Regression for Communication and COSII

Model summary				Anova	Coefficients		
R	R Square	Adjusted R Square	Durbin-Watson	F (df)	B	Beta	t
Dependent variable: COSII							
0,231	0,053	0,051	1,88	23,739* (1)			
Constant					1,841		6,229*
Communication					0,365	0,231	4,872*

*Significant at the 0,05 level

It is apparent from Table 8.19 that Communication accounted for 5,3 percent of the variation in the chance of successfully implementing an idea with adjusted R^2 = 5,1 percent. Communication statistically significantly predicted the chance of successfully implementing an idea, $F(1, 423) = 23{,}739$, $p < 0{,}0005$.

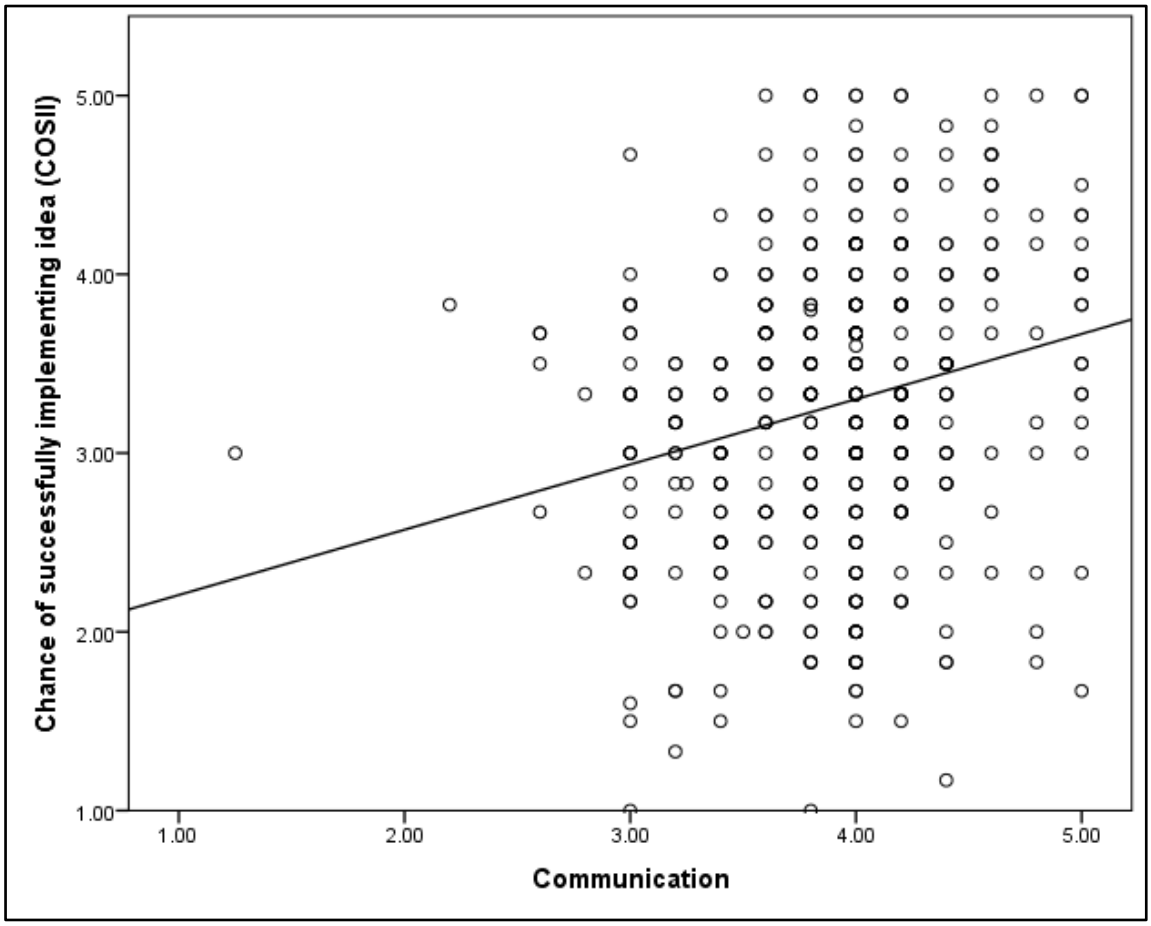

Figure 8.21: Scatterplot of Communication against COSII

Based on the results of the linear regression, it could further be concluded that a positive relationship exists between Communication and COSII, and that changes in COSII are related to changes in Communication. In other words, it seems possible that if a person's interpersonal communication competence improves, their chances of successfully implementing an idea in an organisation will also improve.

Additionally, since the goal here was not to produce precise predictions, the low R-squared value was not a concern. Moreover, the low R-squared value is probably an indication that there are many factors besides Communication which influence idea implementation in an organisation and it would be challenging to construct a model which accurately predicts successful implementation based only on Communication.

8.5.2 Relationship between Inquisitiveness and COSII

An independent samples t-test was used to determine if there is a difference in the mean score for the dependent variable, COSII, between the group including people with a low rating of Inquisitiveness (InqLow) and the group including people with a high rating of Inquisitiveness (InqHigh).

Data is a mean ± standard deviation, unless otherwise stated. There were 90 participants in the group which scored Inquisitiveness low (InqLow), and 335 participants in the group which scored Inquisitiveness high (InqHigh).

The mean COSII score was higher for the InqHigh group (3,358 ± 0,825) than for the InqLow group (2,937 ± 0,765). A statistically significant difference of 0,421 ± 0,096 [mean ± standard error], $t(423) = -4{,}363$, $p < 0{,}005$. Concerning the statistical null hypotheses, as stated in Table 7.11 in Section 7.8.3, there was a statistically significant difference between means ($p < 0{,}05$), and therefore, the null hypothesis can be rejected. Consequently, based on the results of the independent samples t-test, one could conclude that people who are generally more inquisitive in nature, are more likely to succeed in implementing their ideas in an organisation.

A linear regression was run to further investigate the effect of Inquisitiveness on COSII. To assess linearity, a scatterplot of Inquisitiveness against COSII with a superimposed regression line was plotted. The results of the regression are provided in Table 8.20, and the scatterplot is displayed in Figure 8.22. Visual inspection of the scatterplot indicated a linear relationship between Inquisitiveness and COSII.

Table 8.20: Regression for Inquisitiveness and COSII

Model summary				Anova	Coefficients		
R	R Square	Adjusted R Square	Durbin-Watson	F (df)	B	Beta	t
Dependent variable: COSII							
0,244	0,059	0,057	1,85	26,75* (1)			
Constant					1,667		5,339*
Inquisitiveness					0,379	0,244	5,172*

*Significant at the 0,05 level

It is apparent from Table 8.20 that Inquisitiveness accounted for 5,9 percent of the variation in the chance of successfully implementing an idea with adjusted R^2 = 5,7 percent. Inquisitiveness statistically significantly predicted the chance of successfully implementing an idea, $F(1, 423) = 26,75$, $p < 0,0005$.

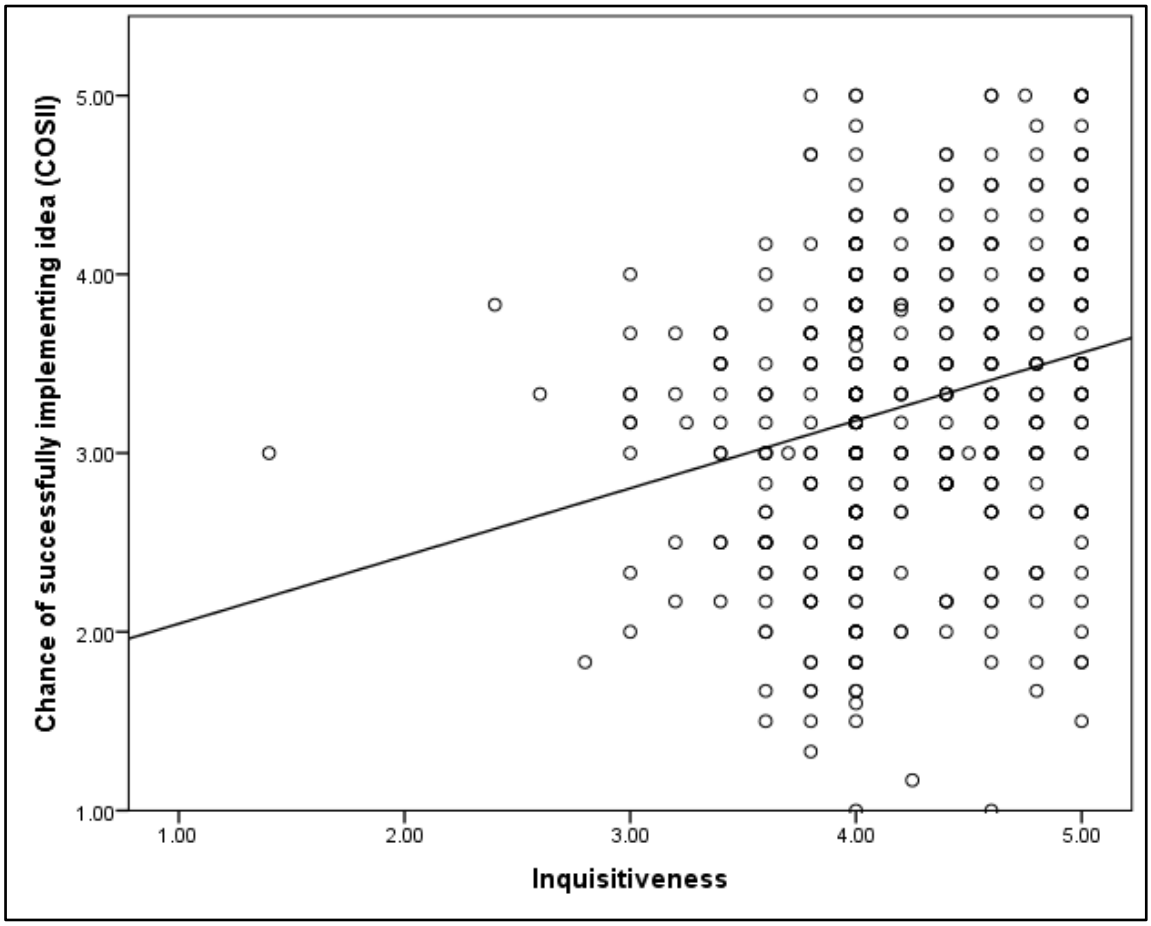

Figure 8.22: Scatterplot of Inquisitiveness against COSII

Based on the results of the linear regression, it could further be concluded that a positive relationship exists between Inquisitiveness and COSII, and that changes in COSII are related to changes in Inquisitiveness. In other words, it seems possible that if a person becomes more inquisitive, their chances of successfully implementing an idea in an organisation will also improve.

Additionally, since the goal here was not to produce precise predictions, the low R-squared value was not a concern. Similar to the findings of Communication, the low R-squared value is probably an indication that there are many factors besides Inquisitiveness which influence idea implementation in an organisation and it would be challenging to construct a model which accurately predicts successful implementation based only on Inquisitiveness.

8.5.3 Summary for the hypotheses based on the expected relationships between Communication, Inquisitiveness and COSII

Relating the results of the statistical tests back to the hypotheses (Table 7.11 in Section 7.8.3), provided the results as shown in Table 8.21 below.

Table 8.21: Results for the hypotheses based on the expected relationships between Communication, Inquisitiveness and COSII

Hypotheses	Description	P	Result	α	Decision	Reference
O4H1: $H_{(Com - COSII)}$	People with a high rating of Communication (ComHigh) are more likely to have a high rating of the chance of successfully implementing an idea than people with a low rating of Communication (ComLow).	0.001	<	0,05	Reject H_0^{O4H1}	Section 8.5.1
O4H2: $H_{(Inq - COSII)}$	People with a high rating of Inquisitiveness (InqHigh) are more likely to have a high rating of the chance of successfully implementing an idea, than people with a low rating of Inquisitiveness (InqLow).	0.000	<	0,05	Reject H_0^{O4H2}	Section 8.5.2

It could thus be concluded that Communication and Inquisitiveness are positively related to a person's chances of successfully implementing ideas in an organisation. In other words, people who consider themselves good communicators are more likely to be successful at implementing ideas in an organisation. Similarly, people who consider themselves to be inquisitive, are more

likely to be successful at implementing ideas in an organisation. Furthermore, it also seems possible that when people's communication skills are improved, and their inquisitiveness is encouraged, it might possibly lead to more ideas being implemented in an organisation.

8.6 RELATIONSHIPS BETWEEN INDEPENDENT VARIABLES AND COSII

The results of the statistical tests for the hypotheses related to the factorial experiment are disclosed in this section.

8.6.1 Factorial experiment

A factorial design is an experiment where more than one factor is manipulated. In this study, the effects of four factors (Preparedness; Active listening; Managerial confidence; Consultation) with different levels on the chance of implementing an idea were examined. Because the interaction of the factors and levels was considered simultaneously, four factors were combined for 16 experimental groups, and each factor was studied in different combinations.

An ANOVA was used to test hypotheses O4H3 to O4H17 as listed in Table 7.12 in Section 7.8.4.

ANOVA makes it possible to determine whether mean dependent variable scores obtained in the experimental conditions differ significantly from each other. This assessment is made by calculating how much variation in the dependent variable scores is attributable to differences between the scores and comparing this with the error term that is attributable to the variation in the dependent variable scores within each experimental condition (Laerd, 2015b). In essence, ANOVA explains what proportion of variation in the dependent variable (Chance of successfully implementing idea - COSII) can be attributed to the manipulation of the experimental variables (Preparedness, Active listening, Managerial confidence and Consultation).

More specifically, the multi-factor (four-way) ANOVA was used to determine if there are interaction effects between the four independent variables on a continuous dependent variable.

An interaction effect occurs when the effect of one independent variable on a dependent variable is different at different levels of the other independent variables. Stated another way, the effect of one independent variable on the dependent variable depends on the level of the other independent variables (Laerd, 2015b).

In order to run a multi-factor ANOVA, there are six assumptions that have to be considered (Laerd Statistics, 2015b). The first three assumptions relate to the choice of study design and the measurements made, whilst the last three assumptions relate to how the data fits the four-way ANOVA model. These assumptions are discussed in more detail below.

8.6.1.1 ANOVA – Assumption 1

There is one dependent variable that is measured at the continuous level (i.e. the interval or ratio level). In this study there was one dependent variable, namely Chance of successfully implementing idea, COSII, which was measured on a semantic differential scale. The measurement of the dependent variable was taken as the average of the scores of the six questions on the semantic differential scale.

8.6.1.2 ANOVA – Assumption 2

There is more than one independent variable (also referred to as factors) where each independent variable consists of two or more categorical, independent groups. In this study, there were four independent variables that are dichotomous variables that have only two categories or levels, namely a “high” and a “low” level.

8.6.1.3 ANOVA – Assumption 3

There must be independence of observations, which means that there are no relationships between the observations in each group of the independent variable or between the groups themselves.

For this study, each participant was only exposed to one experiment in a single intervention, and a participant could not be a member of more than one experimental group. Hence, there were no relationships between participants in any of the experiment groups; they were totally unrelated, and participants in one group could not influence any of the participants in any other group.

8.6.1.4 ANOVA – Assumption 4

There should be no significant outliers in any group of the design.

The applicable test in SPSS and an inspection of the box plots were used to reveal any outliers, i.e. more than 1.5 box-lengths from the edge of their box.

Table 8.22 below provides a summary of all the outliers that were found.

Table 8.22: Summary of outlier values

Experiment #	Case number #	Experiment Mean Value	Outlier Value	High / Low
Exp 6 (0101)	74	3,28	4,67	High
Exp 6 (0101)	363	3,28	2	Low
Exp 10 (1001)	180	3,17	5	High
Exp 10 (1001)	402	3,17	5	High
Exp 10 (1001)	418	3,17	4,5	High
Exp 10 (1001)	95	3,17	2	Low
Exp 10 (1001)	385	3,17	1,5	Low
Exp 12 (1011)	318	3,33	1,5	Low
Exp 14 (1101)	252	3,39	1,83	Low
Exp 15 (1110)	287	3,67	2	Low
Exp 16 (1111)	254	3,65	1,6	Low
Exp 16 (1111)	288	3,65	2,17	Low

Data entries for these cases were checked for data entry errors. After it had been determined that these were indeed unusual values (not caused by data entry errors), the decision was made to keep these data points, as it was found that the removal of these values did not substantially affect the results of the ANOVA.

8.6.1.5 ANOVA – Assumption 5

The dependent variable should be approximately normally distributed in every group of the design. It was determined that the dependent variable is normally distributed for all of the experiment groups, except for Experiment 14 and Experiment 16. However, the ANOVA is considered "robust" to violations of normality (Laerd, 2015b), which means that some violation of this assumption can be tolerated and the test will still provide valid results. Accordingly, the decision was made to run the tests regardless of the results of normality for Experiment 14 and Experiment 16.

8.6.1.6 ANOVA – Assumption 6

The variance of the dependent variable should be equal in every group of the design. This assumption is referred to as the assumption of “homogeneity of variances” (Laerd Statistics, 2015b). It requires that the (population) variance of the dependent variable is the same in each group of the design. This assumption is necessary for statistical significance testing in the ANOVA.

There was homogeneity of variances for the dependent variable (COSII) for all group combinations of the independent variables (P; AL; MC; C), as assessed by Levene's test for equality of variances, p = 0,307.

It has been shown above that all the assumptions for a multi-factor ANOVA have been met, and the results of the test are disclosed in the next section.

8.6.2 Control variables

In an experiment, the independent variable typically has an effect on the dependent variable. Control variables are any other variable that could possibly also have an effect on the dependent variable. As an example in this study, it might be that employees who are older may be less content to change, and therefore do not want to change established processes through the implementation of potentially useful ideas. Therefore, it may be possible that older people have a lower score for COSII because of this trend, thus having an effect on the dependent variable that was not caused by the independent variables.

The occurrence of this phenomenon (older people being resistant to change) can compromise the internal validity of the experiment, and therefore the possible effects of these type of variables have to be taken into consideration, i.e. these variables have to be “controlled” (Laerd Statistics, 2015d). For this reason, before the various ANOVA were conducted, an investigation was done to inspect for any significant relationships between the control variables (as discussed in Section 7.6) and the independent variable (COSII).

Analysis of covariance (ANCOVA) is used to test the main and interaction effects of categorical variables on a continuous dependent variable, whilst controlling for the effects of selected other variables, which might co-vary with the dependent variable (Laerd Statistics, 2015d). Thus, an ANCOVA was firstly conducted whilst controlling for the respective demographic variables. The main effect of Gender on COSII was significant, $F(1, 293) = 4{,}008$, $p = 0{,}046$); and the main effect of Age on COSII was significant, $F(1, 293) = 3{,}618$, $p = 0{,}014$).

Concerning the control variable, Age, a one-way ANOVA was conducted to determine if COSII was different for the different age groups (as described in Section 8.6.2). The differences between these groups were not statistically significant at the 0,05 significance level, $F(3, 416) = 0{,}579$, $p = 0{,}629$. It could thus be concluded that the age of a person does not have an effect on the chance of a person implementing an idea, increasing the possibility that the effect on COSII was caused by the independent variable, i.e. increasing the internal validity of the experiment.

Concerning the control variable, Gender, an independent samples t-test was conducted to determine if COSII was different for males (n = 135) and females (n = 288). Data is presented as a mean ± standard deviation. The mean COSII score for males (3,428 ± 0,766) was higher than the mean COSII score for females (3,202 ± 0,846), a statistically significant difference at the 0,05 significance level of 0,226 ± 0,086 [mean ± standard error], $t(421) = 2{,}632$, $p = 0{,}009$.

Additionally, a Chi-square test was conducted to determine if the distribution of gender was statistically significantly different between experiment groups, meaning that the effect of gender could be due to how participants were assigned to the different experiments. The distribution of gender in the different experiments was not statistically significantly different at the 0,05 significance level Chi-square (df = 15) = 13,50, p = 0,56. Hence it appears that the result of the t-test was not due to the distribution of gender among the experimental treatments.

Based on the above results, the possibility exists that the gender of a person could have an effect on the chance of a person implementing an idea or not. No reference was found in the literature to gender having an influence on innovation or idea implementation specifically. Fourteen males and six females were interviewed in Phase One of the study, and it is questionable whether this ratio of males to females in Phase One could have had an influence on this result in Phase Two.

8.6.3 ANOVA results

It was concluded in Section 8.6.2 above that, except for possibly gender, none of the other control variables that were measured in the experiment (Age, Department, Level of education, Experience and Job grade) had an influence on the dependent variable, COSII.

Table 8.23 below provides the output of the ANOVA. Statistical significance was accepted at the $p < 0,05$ level.

Table 8.23: Results of ANOVA

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected model	23,921	15	1,595	2,434	0,002
Intercept	4421,886	1	4421,886	6749,804	0,000
Preparedness (P)	1,034	1	1,034	1,579	0,210
Active listening (AL)	7,348	1	7,348	11,216	0,001
Managerial confidence (MC)	3,652	1	3,652	5,575	0,019
Consultation (C)	4,705	1	4,705	7,182	0,008
Preparedness (P) * Active listening (AL)	0,385	1	0,385	0,588	0,444
Preparedness (P) * Managerial confidence (MC)	0,559	1	0,559	0,854	0,356
Preparedness (P) * Consultation (C)	0,932	1	0,932	1,422	0,234
Active listening (AL) * Managerial confidence (MC)	2,426	1	2,426	3,703	0,050
Active listening (AL) * Consultation (C)	0,185	1	0,185	0,282	0,596
Managerial confidence (MC) * Consultation (C)	0,001	1	0,001	0,002	0,964
Preparedness (P) * Active listening (AL) * Managerial confidence (MC)	0,240	1	0,240	0,366	0,545
Preparedness (P) * Active listening (AL) * Consultation (C)	1,173	1	1,173	1,791	0,182
Preparedness (P) * Managerial confidence (MC) * Consultation (C)	0,307	1	0,307	0,468	0,494
Active listening (AL) * Managerial confidence (MC) * Consultation (C)	0,086	1	0,086	0,131	0,718
Preparedness (P) * Active listening (AL) * Managerial confidence (MC) * Consultation (C)	1,574	1	1,574	2,403	0,122
Error	267,941	409	0,655		
Total	4833,599	425			
Corrected Total	291,862	424			
R Squared = 0,082 (Adjusted R Squared = 0,048)					

Relating the results of the ANOVA back to the hypotheses (Table 7.12 in Section 7.8.4), led to the conclusions as listed in Table 8.24 below.

Table 8.24: Results for the hypotheses based on the factorial experiment

Hypotheses	Description	P	Result	α	Decision	Reference
Main effects						
O4H3: $H_{0(P)}$	Preparedness (P) does not have a significant effect on the chance of successfully implementing an idea.	0,210	>	0,05	Accept $H_{0(P)}$	Table 8.23
O4H4: $H_{0(AL)}$	Active listening (AL) does not have a significant effect on the chance of successfully implementing an idea.	0,001	<	0,05	Reject $H_{0(AL}$	Table 8.23
O4H5: $H_{0(MC)}$	Managerial confidence (MC) does not have a significant effect on the chance of successfully implementing an idea.	0,019	<	0,05	Reject $H_{0(MC)}$	Table 8.23
O4H6: $H_{0(C)}$	Consultation (C) does not have a significant effect on the chance of successfully implementing an idea.	0,008	<	0,05	Reject $H_{0(C)}$	Table 8.23
Two-way interactions						
O4H7: $H_{0(P-AL)}$	There is no significant effect of the 2-way interaction between Preparedness (P) and Active listening (AL) on the chance of successfully implementing an idea.	0,444	>	0,05	Accept $H_{0(P-AL)}$	Table 8.23
O4H8: $H_{0(P-MC)}$	There is no significant effect of the 2-way interaction between Preparedness (P) and Managerial confidence (MC) on the chance of successfully implementing an idea.	0,356	>	0,05	Accept $H_{0(P-MC)}$	Table 8.23
O4H9: $H_{0(P-C)}$	There is no significant effect of	0,234	>	0,05	Accept	Table 8.23

Hypotheses	Description	P	Result	α	Decision	Reference
	the 2-way interaction between Preparedness (P) and Consultation (C) on the chance of successfully implementing an idea.				$H_{0(P-C)}$	
O4H10: $H_{0(AL-MC)}$	There is no significant effect of the 2-way interaction between Active listening (AL) and Managerial confidence (MC) on the chance of successfully implementing an idea.	0,050	<	0,05	Reject $H_{0(AL-MC)}$	Table 8.23
O4H11: $H_{0(AL-C)}$	There is no significant effect of the 2-way interaction between Active listening (AL) and Consultation (C) on the chance of successfully implementing an idea.	0,596	>	0,05	Accept $H_{0(AL-C)}$	Table 8.23
O4H12: $H_{0(MC-C)}$	There is no significant effect of the 2-way interaction between Managerial confidence (MC) and Consultation (C) on the chance of successfully implementing an idea.	0,964	>	0,05	Accept $H_{0(MC-C)}$	Table 8.23
Three-way interactions						
O4H13: $H_{0(P-AL-MC)}$	There is no significant effect of the 3-way interaction between Preparedness (P), Active listening (AL), and Managerial confidence (MC) on the chance of successfully implementing an idea.	0,545	>	0,05	Accept $H_{0(P-AL-MC)}$	Table 8.23
O4H14: $H_{0(P-AL-C)}$	There is no significant effect of the 3-way interaction between	0,182	>	0,05	Accept $H_{0(P-AL-C)}$	Table 8.23

Hypotheses	Description	P	Result	α	Decision	Reference
	Preparedness (P), Active listening (AL), and Consultation (C) on the chance of successfully implementing an idea.					
O4H15: $H_{0(P\text{-}MC\text{-}C)}$	There is no significant effect of the 3-way interaction between Preparedness (P), Managerial confidence (MC), and Consultation (C) on the chance of successfully implementing an idea.	0,494	>	0,05	Accept $H_{0(P\text{-}MC\text{-}C)}$	Table 8.23
O4H16: $H_{0(AL\text{-}MC\text{-}C)}$	There is no significant effect of the 3-way interaction between Active listening (AL), Managerial confidence (MC), and Consultation (C) on the chance of successfully implementing an idea.	0,718	>	0,05	Accept $H_{0(AL\text{-}MC\text{-}C)}$	Table 8.23
Four-way interaction						
O4H17: $H_{0(P\text{-}AL\text{-}MC\text{-}C)}$	There is no significant effect of the 4-way interaction between Preparedness (P), Active listening (AL), Managerial confidence (MC), and Consultation (C) on the chance of successfully implementing an idea.	0,122	>	0,05	Accept $H_{0(P\text{-}AL\text{-}MC\text{-}C)}$	Table 8.23

The relationships that were found to be statistically significant in the ANOVA are discussed in more detail in the following sections.

8.6.3.1 Two-way interaction between Active listening and Managerial confidence

There was a statistically significant two-way interaction for Active listening (AL) and Managerial confidence (MC) $F(1, 409) = 3{,}703$, $p = 0{,}05$. A two-way interaction can determine whether the

differences between the levels of one variable are dependent on the level of another variable. As illustrated in Figure 8.23, the effect of Active listening (AL) on COSII was greater for Managerial confidence (MC) at the high level than for the Managerial confidence (MC) at the low level.

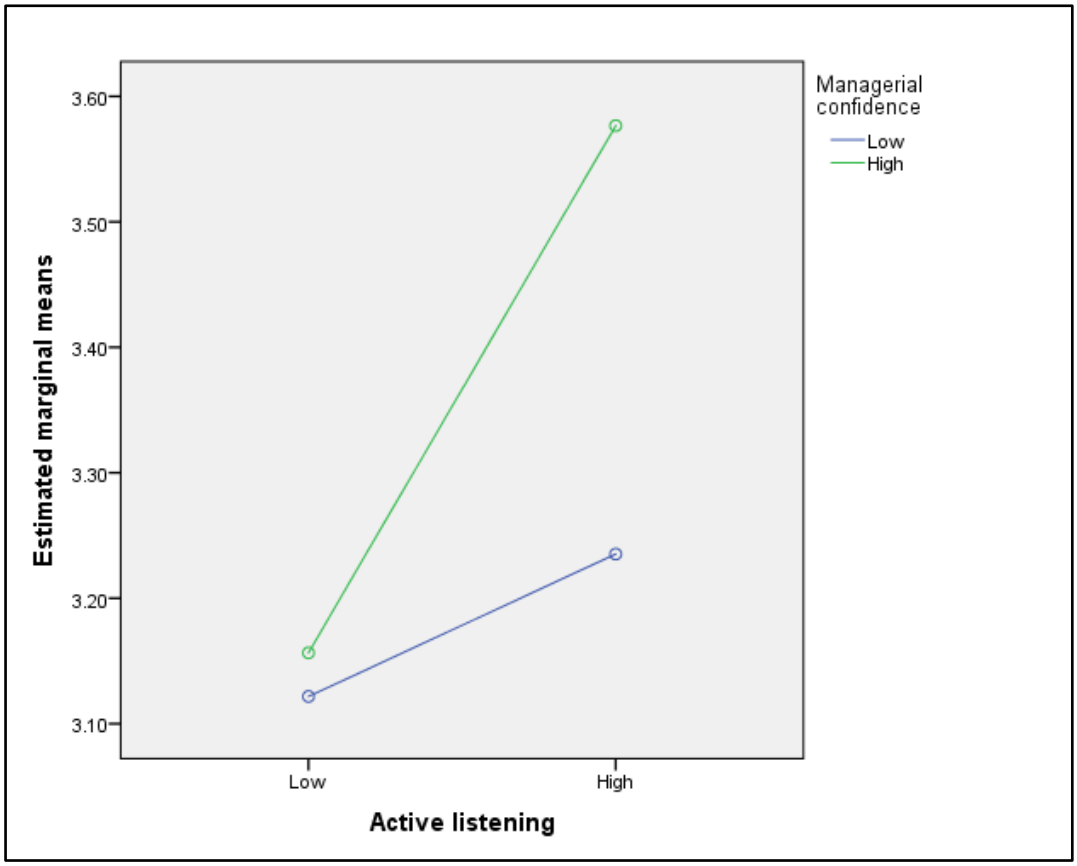

Figure 8.23: Interaction effect of Active listening and Managerial confidence on COSII

With Managerial confidence (MC) at the low level, there was no significant difference between the COSII for Active listening (AL) at the low level (= 3,122) and AL at the high level (= 3,235), p = 0,306.

With Managerial confidence (MC) at the high level, the COSII score for Active listening (AL) at the high level (= 3,577) was significantly higher than the COSII score for Active listening (AL) at the low level (= 3,157), with a mean difference of 0,42 (95% CI, 0,195 to 0,645), $p < 0.005$, as depicted in Table 8.25.

Based on these results, it appears that there is a relationship between how a manager instils confidence in an employee's idea and how a manager is perceived to be listening to an employee's idea, since Active listening (AL) only has a significant effect on COSII when the employee is also perceiving a high level of Managerial confidence (MC). Therefore, it seems likely that if a manager expresses confidence in the person's ability for successful implementation of an idea, the effect of the person experiencing the manager as being genuinely interested in the idea (through active

listening) could influence the chance of successful implementation. In other words, the effect of a manager authentically listening to an employee, will only have an impact on idea implementation if the manager also demonstrates confidence in the employee's ability to implement the idea.

Table 8.25: COSII scores for Active listening and Managerial confidence interaction effect

Estimates					
Dependent variable: COSII					
Active listening	**Managerial confidence**	**Mean**	**Std. Error**	**95% Confidence interval**	
				Lower bound	**Upper bound**
Low	**Low**	3,122	0,076	2,973	3,271
	High	3,157	0,081	2,997	3,316
High	**Low**	3,235	0,081	3,076	3,394
	High	3,577	0,081	3,417	3,736

Pairwise comparisons							
Managerial confidence	**(I) Active listening**	**(J) Active listening**	**Mean difference (I-J)**	**Std. Error**	**Sig.**	**95% Confidence interval**	
						Lower bound	**Upper bound**
Low	**Low**	**High**	-0,114	0,111	0,306	-0,331	0,104
	High	**Low**	0,114	0,111	0,306	-0,104	0,331
High	**Low**	**High**	-0,420	0,114	0,000	-0,645	-0,195
	High	**Low**	0,420	0,114	0,000	0,195	0,645

Based on estimated marginal means

The mean difference is significant at the 0,05 level.

Adjustment for multiple comparisons: Bonferroni.

The main effect of Consultation (C) is discussed next.

8.6.3.2 Main effect of Consultation

The main effect of Consultation (C) on the Chance of successfully implementing idea (COSII) was significant. The main effects are the differences between the means of the levels of the variables, ignoring all the other variables.

The main effect of Consultation on the Chance of successfully implementing idea (COSII) is displayed graphically in Figure 8.24 below.

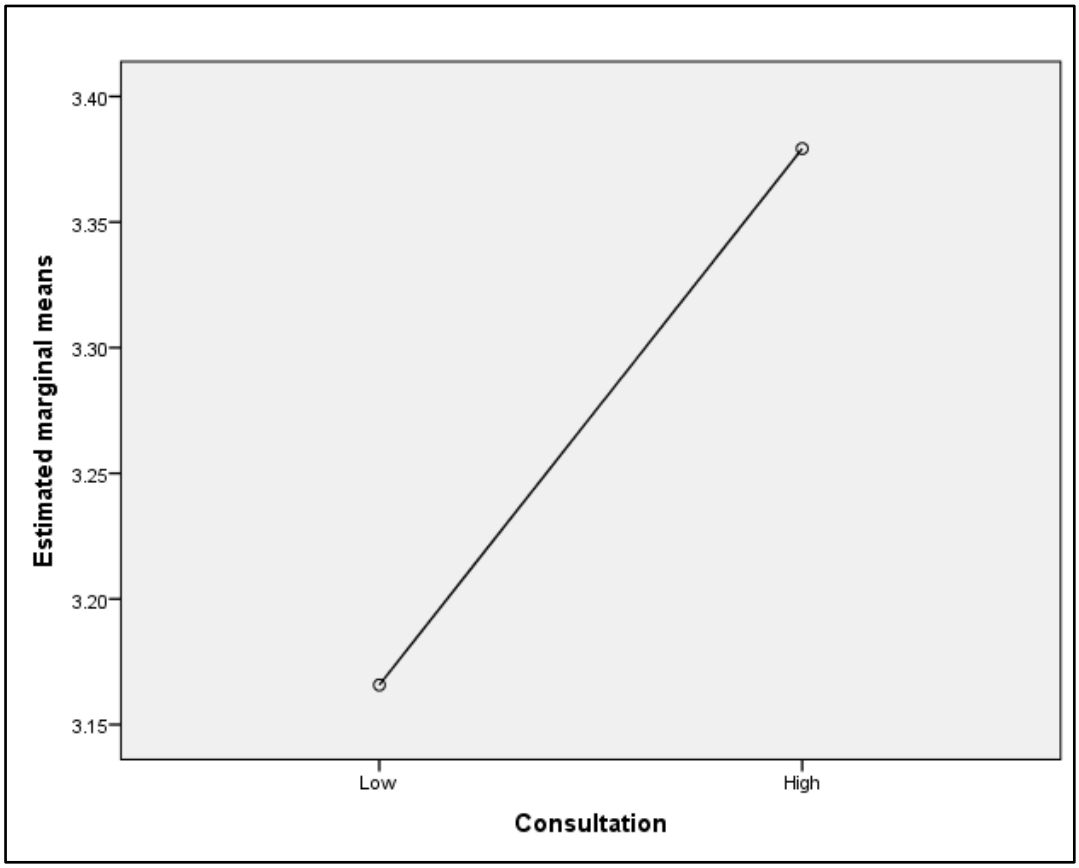

Figure 8.24: Main effect of Consultation on COSII

The mean COSII score for Consultation (C) at the low level was 3,166 ± 0,055 and 3,379 ± 0,057 for Consultation at the high level, a statistically significant mean difference of 0,214 (95% CI, 0,057 to 0,370), p = 0,008, as depicted in Table 8.26.

Thus, it appears that a manager who has a vested interest in the successful implementation of an idea (i.e. being available for advice and providing guidance) has an influence on implementation success, as opposed to a manager who shows little interest in the successful implementation of an idea. It could also be argued that the reason for the lack of interaction of Consultation (C) with any of the other variables is that it is such an engaging activity in itself, meaning that it encompasses some of the elements of the other variables, e.g. listening to employees and portraying confidence in an idea.

Table 8.26: The main effect of Consultation on COSII

Estimates				
Dependent variable: Chance of implementing idea				
Consultation	**Mean**	**Std. Error**	**95% Confidence interval**	
			Lower bound	**Upper bound**
Low	3,166	0,055	3,057	3,275
High	3,379	0,057	3,267	3,492

Pairwise comparisons						
(I) Consultation	**(J) Consultation**	**Mean Difference (I-J)**	**Std. Error**	**Sig.**	**95% Confidence Interval**	
					Lower bound	**Upper bound**
Low	**High**	-0,214	0,080	0,008	-0,370	-0,057
High	**Low**	0,214	0,080	0,008	0,057	0,370

Based on estimated marginal means

The mean difference is significant at the .05 level.

Adjustment for multiple comparisons: Bonferroni.

8.6.4 Summary of ANOVA results

To summarise, the following results were generated through the factorial experiment:

- There was no statistically significant four-way interaction between the independent variables.
- There were no statistically significant three-way interactions between the independent variables.
- There was a statistically significant two-way interaction between Active listening and Managerial confidence. The extent of this interaction was discussed in Section 8.6.3.1.
- The main effect of Consultation on the dependent variable (COSII) was significant. The extent of this interaction has been discussed in Section 8.6.3.2.
- The main effect of Preparedness was not significant, $F(1, 409) = 1.579$, $p = 0.210$.

Thus, it appears that the factorial experiment was conducted satisfactorily and some notable results were generated.

8.7 CONCLUSION

This chapter was dedicated to analysing the data collected for the purpose of Phase Two of this study and presenting the results of the findings. Firstly, it was determined that the realised sample was appropriate and reflected the intended population of this study, i.e. employees of a business organisation who can contribute ideas and take actions to implement their ideas in their various work environments. The description of the realised sample also included the descriptive statistics for all the variables that had been measured.

After the discussion of the realised sample and the descriptive statistics of the variables, the results of a SEM were analysed, confirming that positive relationships existed between the variables and constructs as proposed in the associated hypotheses.

After the analyses and conclusions of the SEM, a discussion followed on the results of the hypotheses testing for all the expected relationships between the variables and constructs.

The objective of this study was to assess the relationships between POS and S-E and associated variables on idea implementation. Ultimately, from the results presented in this chapter, the researcher could conclude that POS and S-E and some of the associated variables do have an influence on idea implementation.

The following chapter is the final one for this research study and concludes the study by summarising the results and accompanying findings, suggesting recommendations, discussing limitations and future research, and reconciling the study findings with the objectives of the study.

CHAPTER 9
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

9.1 INTRODUCTION

This final chapter places the results of the study in perspective by discussing the conclusions as well as the implications of the findings for the influence of self-efficacy (S-E) and perceived organisational support (POS) and associated variables on idea implementation by employees in an organisation, and refers to the importance and significance of the results. Recommendations are provided for improving the chances of successfully implementing the potentially useful ideas of employees in an organisation. In closing, the limitations of the study are described and areas for further research are identified. The chapter and study conclude with a summary of the research.

9.2 DISCUSSION OF FINDINGS

This section reiterates the findings of the research results as stated in Chapter 8. Each finding was relevant in achieving the primary objective of the study, which was to investigate idea implementation by employees in an organisation through the main constructs of S-E and POS. The findings of the study are therefore related back to the objectives of the study, which were stated in Section 1.3 as follows:

1. To identify and explore variables related to the constructs of S-E and POS in the context of idea implementation by employees in an organisation;
2. To investigate the relationships between the variables identified in Objective 1 and the constructs of S-E and POS;
3. To investigate the relationships between S-E and POS and the chance of successfully implementing an idea; and
4. To investigate the relationships between the variables identified in Objective 1 and the chance of successfully implementing an idea.

The respective findings for each of these objectives are discussed in more detail below.

9.2.1 Identify and explore variables related to the constructs of S-E and POS in the context of idea implementation by employees in an organisation

Phase One (qualitative phase) of the study revealed a number of behaviours associated with S-E and POS which played a role in getting the useful ideas of employees implemented in an organisation. These behaviours were ultimately formulated as variables for the purpose of this study.

The variables associated with POS were: Active listening; Managerial confidence; and Consultation. The variables associated with S-E were Preparedness; Communication; and Inquisitiveness.

The arguments for the association of the different variables with the respective main construct are provided in Table 9.1 below.

Table 9.1: Variables associated with S-E and POS

Self-efficacy	
Variable	**Association**
Preparedness	The association of Preparedness with S-E was based on the argument that people who are more prepared for the implementation of their ideas, will be more self-assured that they can implement an idea successfully, meaning the person will have a higher level of S-E that the idea could be implemented successfully (Chen *et al.*, 2009: 203; Giallo & Little, 2003: 21).
Communication	The qualitative phase revealed that people who successfully implemented their ideas utilised communication skills copiously to aid implementation. Since this trait is internal to the individual and not from an external influence (as described in Section 6.6), the variable, “Communication”, was associated with S-E for the purpose of this study. Moreover, a few studies confirmed a positive relationship between communication skills and S-E (Rubin *et al.*, 1993: 217; Nørgaard *et al.*, 2012: 94; Erozkan, 2013: 739; Morin & Latham, 2000: 567).
Inquisitiveness	The qualitative phase revealed that people who successfully implemented their ideas were regarded as being generally curious in nature. Since this trait is internal to the individual and not from an external influence (as described in Section 6.6), the variable, “Inquisitiveness”, was associated with S-E for the purpose of this study. Moreover, the study of Karwowski (2012: 554) confirmed a positive relationship between “curiosity” and S-E.
Perceived organisational support	
Variable	**Association**
Active listening	The association of Active listening with POS was essentially based on the argument that employees may react emotionally to whether they believe a supervisor is effectively listening (or not) which, in turn, may distinctively affect perceived support and ultimately work outcomes. (Lloyd *et al.*, 2015: 514; Eisenberger *et al.*, 1990: 57; Podsakoff *et al.*, 2000: 524; Pundt *et al.*, 2010: 176).
Managerial confidence	The association of Managerial confidence with POS was essentially based on the argument that supervisor support constitutes verbal expression of trust, confidence, and praise, which directly influence employee tendencies to engage in innovative behaviour, because an encouraging leader tends to help a follower gain confidence, to emphasise the importance of their work, and to provide freedom to carry out the work (Zhang & Bartol, 2010: 117; Tierney & Farmer, 2002: 1139).
Consultation	The association of Consultation with POS was essentially based on the argument that participation in decision making is one of the key attributes of POS (Hurley & Hult, 1998: 51), and consultation involves taking note of issues and concerns from subordinates (Yukl, 1999: 220) and encouraging suggestions for improvement, inviting participation in decision making, and incorporating the ideas and suggestions of others in decisions (Amabile *et al.*, 2004: 13).

Preparedness, Active listening, Managerial confidence and Consultation were included as the independent variables in a factorial experiment designed to investigate the influence of these variables on idea implementation by employees in an organisation, and these variables were manipulated as part of the experimental treatments.

Idea implementation by employees in an organisation was thus taken as the dependent variable in the factorial experiment and was denoted by the variable “Chance of successfully implementing idea”, COSII.

Communication and Inquisitiveness were deemed too challenging to manipulate for the sake of the experiment, and consequently these variables were included for measurement, but were not manipulated as part of the experiment, i.e. these two variables were regarded as constants.

The relationships between these variables, the relevant main construct (S-E or POS) and idea implementation by employees in an organisation were incorporated in the succeeding objectives and are discussed in more detail in the following sections.

9.2.2 Investigate the relationships between identified variables and the construct of S-E

The expected relationships between the constants, Communication and Inquisitiveness, and the main construct with which these two variables were associated during the qualitative phase, namely S-E, are discussed in this section.

9.2.2.1 The relationship between Communication and S-E

A few studies confirmed a positive relationship between communication competence and S-E (Rubin *et al.*, 1993: 217; Nørgaard *et al*., 2012: 94; Erozkan, 2013: 739; Morin & Latham, 2000: 567). However, none of these studies investigated the relationship between S-E and communication competence in the context of innovation.

The SEM results indicated a positive relationship between Communication and S-E. Correspondingly, the hypothesis (listed in Table 7.9 in Section 7.8.1) based on the expected relationship between Communication and S-E, and the subsequent data analysis methods that were applied to test the hypothesis, confirmed the positive relationship between interpersonal communication competence and S-E.

These findings led to the conclusion that an individual’s perception of interpersonal communication competence in the work environment is positively related to the individual’s S-E. In other words, people who perceive themselves as good communicators, will in all probability have high S-E as well, and furthermore if a person’s interpersonal communication competence improves, there is a possibility that the person’s S-E will also increase.

9.2.2.2 The relationship between Inquisitiveness and S-E

The study of Karwowski (2012: 554) confirmed a positive relationship between curiosity and S-E.

The SEM results indicated a positive relationship between Inquisitiveness and S-E. Correspondingly, the hypothesis (listed in Table 7.9 in Section 7.8.1) based on the expected relationship between Inquisitiveness and S-E, and the subsequent data analysis methods that were applied to test the hypothesis, confirmed the positive relationship between Inquisitiveness and S-E.

These findings led to the conclusion that an individual's perceived level of inquisitiveness is positively related to the individual's S-E. That is to say that people who perceive themselves as being inquisitive, will in all probability have high S-E as well, and furthermore it seems possible that when a person becomes more inquisitive, the person's S-E could also increase.

9.2.3 Investigate the relationships between S-E and POS and COSII

For this study, innovation was taken as the implementation of useful ideas by employees in a business organisation. This viewpoint fundamentally implicated that the implementation of useful ideas in an organisation is affected by the traits of the individual and also the organisational environment in which the individual operates. This led to the identification of the two main constructs of S-E, as an individual-level variable, and POS, as an organisational-level variable.

The expected relationships between S-E and POS and COSII are discussed in this section.

9.2.3.1 The relationships between S-E and COSII

As to the influence of S-E on idea implementation, although not investigated extensively in innovation-related research, a small number of studies did empirically investigate the relationship between S-E and innovation (Tierney & Farmer, 2002; Kumar & Uzkurt, 2010; Ahlin *et al*., 2014). Hence, the purpose of this research was not to repeat these studies, but to corroborate the findings of the above-mentioned studies and add to the knowledge base on the influence of S-E on idea implementation. S-E was therefore also measured as part of Phase Two of this study.

The SEM results indicated a positive relationship between S-E and COSII. Correspondingly, the hypothesis (listed in Table 7.10 in Section 7.8.2) based on the expected relationship between SE and COSII, and the subsequent data analysis methods that were applied to test the hypothesis, confirmed a positive relationship between S-E and COSII.

It could thus be concluded that people with higher S-E are more likely to succeed in implementing their ideas in an organisation, and furthermore it also seems possible that an increase in people's S-E might possibly lead to more ideas being implemented in an organisation.

These findings endorse the acknowledged positive relationship between S-E and individual innovative behaviour in organisations.

9.2.3.2 The relationships between POS and COSII

As to the influence of POS on idea implementation, although not investigated extensively in innovation-related research, a small number of studies did empirically investigate the relationship between POS and innovation (West & Anderson, 1996; Dougherty & Hardy, 1996; Antoncic & Zorn, 2004; Hornsby *et al*., 2009). Hence, the purpose of this research was not to repeat these studies, but to corroborate the findings of the above-mentioned studies and add to the knowledge base on the influence of POS on idea implementation. POS was therefore also measured as part of Phase Two of this study.

The SEM results indicated a positive relationship between POS and COSII. Correspondingly, the hypothesis (listed in Table 7.10 in Section 7.8.2) based on the expected relationship between POS and COSII, and the subsequent data analysis methods that were applied to test the hypothesis, confirmed a positive relationship between POS and COSII.

It could therefore be concluded that people who perceive their organisation as supportive, are more likely to succeed in implementing their ideas in an organisation, and furthermore it also seems likely that an increase in POS might possibly lead to more ideas being implemented in an organisation.

These findings endorse the acknowledged positive relationship between POS and individual innovative behaviour in organisations.

9.2.4 Investigate the relationships between the selected variables related to S-E and POS and COSII

In the first qualitative phase of this study, six variables were discovered that were associated with idea implementation and also with the main constructs, S-E and POS. The grounds for association of these variables with S-E and POS were laid out in Table 9.1 in Section 9.2.1.

Four of these variables (Preparedness, Active listening, Managerial confidence and Consultation) were manipulated as part of a factorial experiment, thus comprising the independent variables in the experiment. The participants' responses to the respective combinations of manipulations of the independent variables were then measured through the variable, "Chance of successfully implementing idea" (COSII), thus comprising the dependent variable in the experiment. All the required measurements were conducted with the use of a personally administered questionnaire.

Two constants which were not manipulated for the sake of the experiment, "Communication" and "Inquisitiveness", were also measured with data collected through the questionnaire.

The conclusions on the relationships between the respective variables and COSII are dealt with in the following sections. The conclusion on the two constants, Communication and Inquisitiveness, is discussed first, followed by a discussion of the conclusions on the independent variables which were incorporated in the factorial experiment.

9.2.4.1 Relationship between Communication and COSII

Through the hypothesis (listed in Table 7.11 in Section 7.8.3) based on the expected relationship between Communication and COSII, and the subsequent data analysis methods that were applied to test the hypothesis, it was concluded that people who view themselves as good communicators are more likely to succeed in implementing their ideas in an organisation. Furthermore, it also seems possible that when people's communication skills are improved, it might possibly lead to more ideas being implemented in an organisation.

The conclusion that people who view themselves as good communicators may be more successful at getting ideas implemented seems plausible, since one of the main departure points of this study was that innovation happens in a social system in the organisation, and communication is the means through which social systems function.

Communication is a contemporary topic in innovation-related research and the link between communication and innovation has been studied at length recently (Ceschi, Dorofeeva & Sartori, 2014; Gómez, Martínez, Peñalver & Vidal, 2014; Im, Montoya & Workman, 2013; Leeuwis & Aarts, 2011).

Communication is utilised in many aspects of innovation and idea implementation, e.g. pitching and selling an idea, soliciting support for an idea, implementation activities like training users of the idea, and change management activities like selling the benefits of an idea. Thus it seems feasible that feeling competent at interpersonal communication will increase a person's self-assurance with regards to idea implementation in an organisation.

This is not to say that a person who does not feel that competent concerning interpersonal communication will not be able to generate and implement ideas, but rather that a person who feels more competent at interpersonal communication would give themselves a better chance of being successful at implementing their ideas.

9.2.4.2 Relationship between Inquisitiveness and COSII

Through the hypothesis (listed in Table 7.11 in Section 7.8.3) based on the expected relationships between Inquisitiveness and COSII, and the subsequent data analysis methods that were applied to test the hypothesis, it was concluded that people who are generally more inquisitive in nature, are more likely to succeed in implementing their ideas in an organisation. Furthermore, it also

seems possible that when people's inquisitiveness is encouraged, it might lead to more ideas being implemented in an organisation.

The literature review revealed that although anecdotal evidence confirms that curiosity is one of the most natural characteristics of innovative individuals, there is far less empirical evidence that this is indeed the case (Karwowski, 2012: 547). Notwithstanding, the qualitative phase presented comprehensive evidence that individuals who were successful at implementing their ideas displayed behaviours of investigating how things work, experimenting with ideas, enhancing and simplifying ideas or processes, being in the habit of learning new things, and having a learning mindset. All these traits have been positively associated with the inquisitive individual and the relationship between inquisitiveness and innovative behaviour was also established empirically in Phase Two of this study.

In conclusion, it seems reasonable to associate inquisitiveness with innovative behaviour, since the average person who ponders how things work and who tries to "figure out" things, usually has some ideas regarding improvements as well.

9.2.4.3 Preparedness

Through the formulated hypotheses (listed in Table 7.12 in Section 7.8.4) and the subsequent data analysis methods that were applied to test the hypotheses of the factorial experiment, it was concluded that Preparedness does not have a significant effect on COSII.

This result seemed counterintuitive since it was argued that being prepared leads to a person being more self-assured that they can implement an idea successfully. This is not to say that no or little preparation is required when pitching or implementing an idea, but it appears that being properly prepared does not influence a person's self-belief of being able to successfully implement an idea.

Previous studies confirmed that people feel more confident when they are better prepared for a task at hand (Giallo & Little, 2003: 27), and people who are well prepared are better equipped to deal with concerns raised when pitching an idea (Chen *et al.*, 2009: 203). However, no previous studies were found where a person's level of preparation before pitching and implementing an idea was investigated in relation to being successful at implementing the idea.

Thus, it stands to reason that there are many advantages to prepare thoroughly before pitching and implementing an idea, but it seems that providing a person with more time to prepare for pitching and implementing an idea will probably not increase the likelihood of the idea being implemented successfully.

9.2.4.4 Active listening and Managerial confidence

Through the formulated hypotheses (listed in Table 7.12 in Section 7.8.4) and the subsequent data analysis methods that were applied to test the hypotheses of the factorial experiment, it was concluded that there was a statistically significant two-way interaction between Active listening and Managerial confidence. This effectively means that the level of one variable is dependent on the level of the other variable. In this case, the effect of Active listening on the chance of successfully implementing an idea was greater when Managerial confidence was high, than when Managerial confidence was low.

Thus, the conclusion could be made that Active listening only has a significant effect on COSII when the person is also perceiving high Managerial confidence, i.e. a manager expressing confidence in the person's ability to successfully implement the idea. In other words, the effect of a manager authentically listening to an employee, will only have an impact on idea implementation if the manager also demonstrates confidence in the employee's ability to implement the idea.

This seems to be a viable finding, since it stands to reason that if a person does not perceive a manager to be confident that the person will be successful in implementing an idea, the person could argue that the manager would not be interested in listening to the idea in any case, thus annulling the effect of listening. On the other hand, it appears that if a manager expresses confidence in a person's ability to successfully implement an idea, the effect of the person experiencing the manager as being genuinely interested in the idea (through active listening), improves the chance of successful implementation.

Black (2015: 80) claimed that the strength of persuasive words – that are supposed to build confidence – is dependent on the credibility of the persuader. Thus, it is possible that a person can express confidence, but that it is insignificant – or has no influence on the receiver – because the person conveying the confidence does not have credibility. By the same token, the effect of Active listening (as explained in Section 6.7.4) could be diminished if the listener is not perceived as being credible by the speaker. Credibility in this sense refers to a manager's confidence in a person's ability to successfully implement an idea, meaning that if a manager instils confidence, the manager is also perceived as credible, and vice versa.

Thus, in the light of these findings and arguments, it seems that a manager must be considerate of the impact of listening to an employee's idea and also of the demonstration of confidence in a person's ability to implement an idea, since the impact of listening will be higher if the manager also displays confidence in the persons' ability to successfully implement the idea.

9.2.4.5 Consultation

Through the formulated statistical hypotheses (listed in Table 7.12 in Section 7.8.4) and the subsequent data analysis methods that were applied to test the hypotheses of the factorial experiment, it was concluded that the main effect of Consultation on COSII was significant. In other words, when employees experience consultation-like behaviour from managers, they are more likely to succeed in implementing their ideas in an organisation.

The variable, “Consultation”, exemplifies the behaviour of a manager who takes note of the issues and challenges concerning the implementation of an idea and accordingly provides advice and guidance to the implementer, and also involves the practices of “negotiation” and “joint problem solving” (Yukl, 1999: 220).

Evidently this behaviour is not only a function of a manager’s actions, the person who wants to implement the idea must also be open to approach a manager to discuss issues and ask for guidance. In the study of Yukl (1999: 230), it was found that managers were more inclined to consultation-like behaviour with a subordinate when there is a favourable exchange relationship and when there is a relationship of strong mutual trust.

Consultation did not have an interaction effect with any of the other variables. The reason for the lack of interaction of Consultation with the other variables may be because it is such an engaging activity in itself, meaning that it encompasses some of the elements of the other variables, e.g. listening to employees and portraying confidence in the ability of the implementer.

9.3 CONTRIBUTION OF THE STUDY

This study makes a contribution on six levels.

9.3.1 Empirical confirmation of the positive relationships between S-E and POS and IIB

It was pointed out in Section 6.2 that only a few studies could be found where S-E had been studied with regards to IIB in the context of organisational innovation (Tierney & Farmer, 2002; Kumar & Uzkurt, 2010; Ahlin *et al*., 2014); and the studies providing empirical evidence of the positive relationship between innovative behaviour and POS are also rather sparse (Lloréns Montes *et al*., 2004: 169; Pundt *et al*., 2010: 178; Alpkan *et al*., 2010: 733).

None of these studies operationalised the outcome variable (dependent variable) as the implementation of a useful idea by an employee in an organisation (refer to Section 7.4 for more detail).

Thus, although the relationship between S-E and innovation, and the relationship between POS and innovation, have been investigated and confirmed, this study makes a unique contribution by

providing empirical evidence of the influence of S-E and POS on innovation, distinctively operationalised as idea implementation by employees in an organisation.

9.3.2 Investigation of individual-level factors and organisational-level factors in the same study

Anderson *et al.* (2014: 1302) demanded an explicit approach to innovation research, namely more multilevel designs to explore factors implicated in innovation across multiple levels of analysis (e.g. individual and organisational). Baer (2012: 1116) also made the case that consideration of both individual and organisational factors may prove to be a fruitful avenue for innovation-related research.

In this research, factors related to innovation on the individual level and the organisational level were investigated in the same study. Furthermore, the investigation of these factors was not only focused on their respective influence on idea implementation, but also on their combined influence on idea implementation, since they were included in a factorial experiment design.

9.3.3 Breakdown of S-E and POS into actual behaviours

Although the relationship between S-E and innovation, and the relationship between POS and innovation, have been confirmed, S-E and POS were mostly regarded as holistic constructs in these studies.

The attributes of S-E and POS were reviewed at length in Chapter 3 and Chapter 4 respectively, and as a result of the selection criteria applied during the qualitative data analysis stage, variables related to S-E and POS which have not been studied before, were selected for the purpose of this study.

Thus another unique contribution of this study was the breakdown of S-E and POS into more explicit behaviours – i.e. behaviours that a person can actually enact and experience in an organisation – which have not been studied before.

9.3.4 Empirical confirmation of the relationship between interpersonal communication competence and IIB

Previous studies confirmed the link between group communication and organisational innovation (Monge *et al*., 1992), investigated the intra-organisational aspects of communication as a determinant of innovation (Kivimäki *et al*., 2000), and examined the role of communication in innovation processes (Leeuwis & Aarts, 2011). However, no study to date has empirically investigated the relationship between interpersonal communication competence and IIB.

This study measured interpersonal communication competence of individuals whilst presenting a scenario where the individual had the opportunity to implement an idea. Based on the statistical tests that were performed, the conclusion was made that people who view themselves as good communicators may be more successful at getting ideas implemented.

Previous studies have not related communication to idea implementation by employees in an organisation specifically, and in this context, the contribution of this study thus has particular implications for communication theory and innovation theory.

9.3.5 Empirical confirmation of the relationship between Inquisitiveness and IIB

This study also measured individuals' level of inquisitiveness whilst presenting a scenario where the individual had the opportunity to implement an idea.

To date, no empirical evidence of the relationship between the level of inquisitiveness of an individual and IIB is available (Karwowski, 2012: 547. This study has provided empirical evidence on this relationship.

In this context, the contribution of this study thus has particular implications for personality traits theory and innovation theory.

9.3.6 Use of the experimental vignette methodology (EVM) in research on innovation

It was highlighted that the measurement of idea implementation in innovation-related studies has mostly been accomplished through secondary objective data sources such as organisations' own archives, self-report measures, and independent or observer ratings, such as supervisory ratings, peer ratings and expert ratings (Anderson *et al*., 2014: 1317; Somech & Drach-Zahavy, 2013: 695). All of these measurements are retrospective, meaning they take place after implementation has been concluded.

The case was also made that it is challenging to find and study situations in an actual organisational setting where an employee has an idea and is in a position to take action on the idea.

Additionally, experiments as research techniques have very seldom been applied for studying innovation (Sørensen *et al*., 2010: 313) and Anderson *et al*. (2014: 1321) called for intervention studies at the individual and team levels, and consequently argued that such studies will give direct empirical evidence on the usefulness of a range of innovation-related behaviours.

It was revealed that EVM had been utilised in a number of research domains. Furthermore, the use of EVM transcends the wide-ranging subject disciplines within the social sciences and is invaluable in social research (Hughes & Huby, 2004: 46). The use of EVM in this study proved valuable to the

extent that it addressed a number of the issues mentioned above. Most notably, EVM provides a simple and effective method to simulate events and situations concerning how innovation unfolds in an organisation that would be difficult to study otherwise.

According to Phillips and Pugh (2010, cited in Gill & Dolan, 2015: 12), who outlined 15 key areas that they believe can constitute originality in the PhD, taking a particular technique and applying it in a new area also comprises an original contribution.

The researcher is not aware of any other study where the EVM was utilised to study innovation, and therefore the use of the EVM is also regarded as an original contribution of this study.

9.4 IMPLICATIONS FOR THEORY

The claim was made that the lack of a coherent and explicit theoretical base for innovation still prevails (Downs & Mohr, 1976: 701; Wolfe, 1994: 405; Gopalakrishnan & Damanpour, 1997: 19, Anderson *et al*., 2014: 1302; Crossan & Apaydin, 2010: 1164). Nevertheless, six influential theoretical perspectives for innovation were listed in in Table 1.3 in Section 1.1.3 (Anderson *et al.*, 2014: 1299) and it was pointed out that two of the theories mentioned by Anderson *et al.* (2014: 1299) were particularly relevant for this study, namely the Componential Theory of Organizational Creativity and Innovation (Anderson *et al*., 2014: 1299), and the Interactionist Perspective of Organizational Creativity (Anderson *et al*., 2014: 1300).

The Componential Theory of Organizational Creativity and Innovation (Anderson *et al*., 2014: 1299) is based on the premise that work environments impact innovation by affecting components that contribute to innovation. The Interactionist Perspective of Organizational Creativity (Anderson *et al*., 2014: 1300) stresses that innovation is a complex interaction between the individual and their work situation at different levels of the organisation. Some contribution to these theories can be made.

In respect of both theories, the findings of this study confirm that the work environment does have a significant influence on innovation – in this study exemplified through the behaviours of managers. Furthermore, this study has substantiated that innovation is a complex interaction between the individual and their work situation at different levels of the organisation; to name a few: interaction between the individual and their supervisor; interaction between the individual and the people who have to assist with implementation; and interaction between the individual and the people who could benefit from the idea.

This study has also advanced that innovation and the implementation of ideas cannot be properly understood without considering the simultaneous influence of both individual and organisational contingencies. In addition, results suggest that when managers are predominantly involved in the

implementation of ideas through ordinary acts such as instilling confidence and providing support, the chance of implementation success is increased.

Although previous work on the social perspective on innovation acknowledged the importance of involving others during innovation processes and discussed some of the factors examined in this research (e.g. Baer, 2012; Axtell *et al.*, 2000; Frost & Egri, 1991), this study extends this work by identifying specific behaviours that are key to ensuring the contribution of managers' involvement and by examining how these factors shape actual idea implementation.

Another key implication for theory is whether a distinction should be made between the suggestion of ideas and their subsequent implementation when considering innovation (Axtell *et al*., 2000: 283). There certainly is value to be gained in the approach of differentiating between idea generation and implementation, given that different factors are associated with the different aspects of innovation.

Conversely, in order to approach innovation as it unfolds in an organisation pragmatically, the distinction between idea generation and implementation was not emphasised in this study, and innovation was conceptualised as a unitary concept which encompasses a broad set of activities aimed at the generation of ideas, creating support for them, and helping their implementation. This is in line with other studies that did not differentiate between idea generation and implementation, but rather approached innovation as a single construct, termed individual innovative behaviour (Kleysen & Street, 2001: 284; De Jong & Den Hartog, 2010: 23; Janssen, 2000: 288; Ramamoorthy *et al*., 2005: 143).

9.5 IMPLICATIONS FOR PRACTITIONERS

Innovation is a challenging endeavour for many organisations and the findings of this study have implications for managers who want to improve innovation in their organisations. Managers should know how to effectively tap the biggest source of performance improvement available to them – namely, the creativity and knowledge of the people who work for them.

One of the key departure points of this study was that innovation happens through the interactions of people in the organisation in their "everyday" work environment, i.e. through people who interact in numerous settings and networks in the organisation in a formal and informal manner. This study has verified that ordinary behaviours in these interactions could have an influence on the chance of implementing ideas successfully.

Although the importance of building a culture supportive of innovation (e.g. by offering special rewards for innovation, and the establishment of implementation policies and -practices which are perceived as positive and supportive) is widely accepted, the relevance of managers' specific behaviours has been less emphasised.

This study has provided evidence that employees' innovative behaviour is related to the quality of the supervisor-subordinate relationship, and that behaviours such as listening with attention, instilling confidence and being available for guidance and advice, posed to be essential behaviours to people who have ideas that they want to implement.

Listening to employees' ideas goes against conventional management thinking, and so it takes extra effort. However, the appeal of these findings is that these behaviours are not complex or difficult skills to acquire. The practice of cultivating these behaviours properly can be built into management development programmes. The major challenge would be to spur managers and supervisors to let go of the "old", self-imposed patterns of behaviour.

The cultural barriers in organisations that prevent managers from enacting these behaviours should be removed, and these behaviours may also be enhanced through the introduction of effective and well-managed practices that are normally included in total quality management schemes and continuous improvement schemes. The introduction of such schemes can provide a springboard towards broader, companywide initiatives in which employee innovation is crucial.

People's interpersonal communication competence and level of inquisitiveness have also proved to be imperative for innovation. Thus, an investment in the development of these qualities may also be worthwhile.

Interpersonal communication skills are an essential component of a productive workplace, allowing employees to work together cohesively and professionally. There are prevailing ways that could improve employees' communications skills in the workplace (e.g. include communication skills in employee training programs, or include communication skills in performance appraisals) in order to boost idea implementation. Furthermore, an investment in the improvement of interpersonal communication skills of employees could also unlock other benefits for organisations, for example, employee productivity. Thus, improving employee communication skills through training exercises and behaviour modelling can give an organisation a competitive edge.

To promote employees' inquisitiveness, managers could encourage observation and educate employees on how to look for ways of improvement by identifying problems that need to be resolved. Employees could then input information about the problem and their attempt to resolve it into a tracking program for management to consider.

9.6 LIMITATIONS OF THE STUDY

The main limitation of this study was that the sample was made up of employees from only one organisation in a specific industry. Organisations have distinctive cultures, climates and modes of operation, and this may limit the generalisability of the results of this study to other types of employees from other kinds of organisations in other industries, e.g. shop floor employees in a

manufacturing organisation, or sales employees of a sales organisation, or employees of the R & D department in a high-tech organisation.

Additionally, the type of innovation that was incorporated in this study was a process innovation which was incremental in nature. As such, the results may be different for innovations of another type, e.g. radical innovations, which could possibly follow different paths to implementation.

9.7 IMPLICATIONS FOR FUTURE RESEARCH

The limitation of generalisability of the study was emphasised above, and so this study can be extended through replication studies involving other samples from different organisations, such as organisations in specific industries, or specific types of employees, e.g. shop floor employees in a manufacturing organisation, or sales employees of a sales organisation, or employees in the R & D department in a high-tech organisation.

This study can also be replicated by incorporating different types of innovation (e.g. technological innovation) to investigate whether the behaviours identified in this study have the same influence when the innovation possibly follows a different path to implementation.

This study also included specific behaviours that emerged from the qualitative phase of the study, and consequently other behaviours of supervisors and managers can also be investigated to test their influence on idea implementation.

9.8 CONCLUSION

This study commenced with the claim that every person has the potential to generate worthwhile ideas and that employees inevitably have useful ideas about possible improvements in their workplace. However, since having a useful idea is not sufficient to ensure implementation, other factors are deemed necessary to put ideas into practice. This led to the argument that a person can come up with an idea on their own, but implementation of an idea takes place in the realism of the organisation. Thus, individual-level factors and organisational-level factors play a role in idea implementation by employees in an organisation, and consequently S-E and POS were taken as the main constructs for this study.

Accordingly, the objectives of this study were based on investigating the influence of S-E and POS and associated variables on idea implementation by employees in an organisation.

Initially a qualitative approach was taken to generate data through the lenses of S-E and POS on people who were successful at implementing ideas in their organisations. Analysis of this data led to the discovery of certain behaviours which were postulated to influence idea implementation in an organisation. These behaviours were then formulated as variables which were subsequently incorporated in a quantitative approach to determine the extent of their effect in numbers.

The quantitative phase involved a multi-factor experiment where data was collected through a personally administered questionnaire. The different factors that were postulated to influence idea implementation were manipulated with the presentation of a simulated scenario involving a situation where a useful idea could be implemented by the participant, and participants were then asked to make a judgement on the chance of successfully implementing the idea.

Analysed results confirmed that S-E and POS positively influenced idea implementation by employees in an organisation and further indicated which behaviours increased the chance of successfully implementing ideas.

The main conclusions drawn from the interpretation of the results are that at the organisational level, simple, unpretentious acts of support by managers, such as listening with attention, instilling confidence and being available for guidance and advice, have a positive influence on idea implementation; and, at the individual level, that improvement of employees' interpersonal communication competence and encouragement of employees' inquisitiveness could also improve individual innovative behaviour.

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APPENDIX A:
INTERVIEW GUIDE FOR SUCCESS CASE METHOD INTERVIEWS

1. Introduction Key Components:

1. Thank you
2. Your name
3. Purpose
4. Confidentiality
5. Duration
6. How interview will be conducted
7. Opportunity for questions
8. Signature of consent

I want to thank you for taking the time to meet with me today. My name is Rikus Grobler and I would like to talk to you about your experiences in participating in the suggestion and implementation of ideas in your organisation. The purpose of the interview is to obtain insights into the factors which promotes and/or inhibits idea implementation in the organisation.

The interview should take less than an hour. I will be taping the session because I don't want to miss any of your comments. Although I will be taking some notes during the session, I can't possibly write fast enough to get it all down. Because we're on tape, please be sure to speak up so that we don't miss your comments. All responses will be kept confidential. This means that your interview responses will only be accessed by myself and I will ensure that any information include in my report does not identify you as the respondent. Remember, you don't have to talk about anything you don't want to and you may end the interview at any time.

Are there any questions about what I have just explained?
Are you willing to participate in this interview?
Will you please sign the consent form?

Record background information:

Name	
Contact number and email	
Gender	
Age	
Department	
Job Description	
Length of service with the organisation	

2. Questions:

- No more than 15 open-ended questions
- Ask factual before opinion
- Use probes as needed

1. Please provide an example of a useful idea that you put forward in your work environment and indicate if you were able to successfully implement the idea?

2. Please provide evidence that your idea were indeed implemented successfully.

If sufficient evidence is given that idea was indeed implemented successful:

3. What good did it do / benefits were achieved with your idea? Please elaborate.
   (The purpose of this question is to test if the idea realised any benefits – which is a key construct of the definition of implementation for this study.)

   [**Probes**: What value was achieved or contributed to? Why are these results important? What business goals were contributed to? What accomplishments were helped or what goals were contributed to? What costs or negative outcomes were avoided as a result of their actions?]

4. What were the challenges you experienced in getting your idea implemented? Please explain why?
   (The purpose of this question is to investigate if the implementation challenges aligns with the challenges identified in the literature review.)

5. Why would you say you were successful in implementing your idea? Please elaborate.
   (The purpose of this question is to get an overview of the main factors which influenced idea implementation.)

   [**Probes**: What did you do that worked? What did you use that worked?]

6. What role did your supervisor / manager / colleagues play in getting your idea implemented? Please elaborate.
   (The purpose of this question is to test for the attributes and behaviours of POS.)

   [**Probes**: (Attributes of POS):

   - Generation and development of new ideas are expected and supported.
   - Implementation activities are expected.
   - Implementation activities are supported.
   - Implementation activities are recognised, rewarded and incentivised.
   - Resources are provided for implementation activities.
   - Decision-making autonomy are granted to people who pursue implementation activities.
   - Time is allocated to pursue implementation activities.
   - Tolerance exist for risk taking, trial-and-errors or failures of implementation initiatives.
   - Participation in decision making takes place.
   - Learning and development are encouraged within the organisation.

- Coordination and conflict resolution happen among individuals undertaking implementation activities.
- The establishment of implementation policies and -practices which are perceived as positive.

7. What personal traits contributed to getting your idea implemented? Please explain why?
(*The purpose of this question is to get an overview of the personal traits the interviewee believes contributed to getting the idea implemented*).

[**Probes**: What seemed to differentiate you from others who were not successful at implementing their ideas? What motivated you to push through with the implementation?]

8. Did you have self-belief that you would be able to implement your idea? How did you obtain it? Please elaborate?
(*The purpose of this question is to test for the 4 factors affecting S-E and the attributes of innovation S-E*).

[**Probes**:

4 factors affecting S-E:

- Were you successful with previous attempts of implementing ideas (Performance Accomplishments)?
- Did you see another person perform and compared your own competence with that person (Vicarious Experience)?
- Did you receive encouragement from another person (Verbal Persuasion)?
- Were you influenced by physiological states such as anxiety, stress, arousal, fatigue, and mood states (Physiological States)?

Attributes of S-E:

- Vision: Identifying new opportunities.
- Awareness/Empathy: Pay attention to what is around and adopt others' viewpoints.
- Observation: Imagine and understand how things work; Curiosity.
- Information processing: Make connections.
- Creativity: Have original and unique ideas; Uses new approach for traditional problems.
- Idea Testing: Assess ideas for viability, feasibility and desirability.
- Collaboration: Work with others; Able to co-operate effectively across project, functional and organisational boundaries.
- Knowledge Building: Learning-by-doing mentality.
- Persistence: Continue to approach problems despite setbacks.
- Decision Making: Set goals and choose how to proceed.
- Risk Taking: Go against what is expected or safe if necessary.
- Oral and Written Communication: Craft and share information through written and oral means.
- Visualisation of information: Translate ideas into visualizations.]

9. What else in your environment did you use or access that helped you? Please explain why?
(The purpose of this question is to look for any other factors that might have played a role.)

[**Probes**: What tools, references, information sources, or job aids did you use?]

10. What other suggestions do you have that would have increased success?

If idea was <u>not</u> implemented successfully:

1. What can you tell me about what went wrong? Why didn't this seem to work out for you? Please elaborate.

2. Did you receive support for implementing your idea? Please elaborate.

3. Did you believe that you are capable of taking your idea through to successful implementation? Please elaborate.

4. What else got in the way of implementing the idea? Please elaborate.

5. What would you do differently next time? Please explain why?

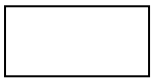
6. What suggestions can you make that would help create a more successful experience with regards to getting your idea implemented?

<u>3. Closing Key Components:</u>

- Additional comments
- Next steps
- Thank you

Is there anything more you would like to add?

I'll be analysing the information you and others gave me and make findings and conclusions as part of my PhD dissertation. I'll be happy to send you a copy to review at that time, if you are interested?

Record answer: 

Thank you for your time, I really appreciate it.

APPENDIX B:
EXHIBITS OF QUALITATIVE DATA ANALYSIS

It was explained in Section 6.6 that the representation of the data through network diagrams promotes conceptualisation of the relationships between concepts, categories and themes and linking them to the evidence in the data supporting the relationships.

The purpose of Figure B.1 and Figure B.2 below is to provide an example of this practice – i.e. how the network diagrams were constructed in Atlas.ti.

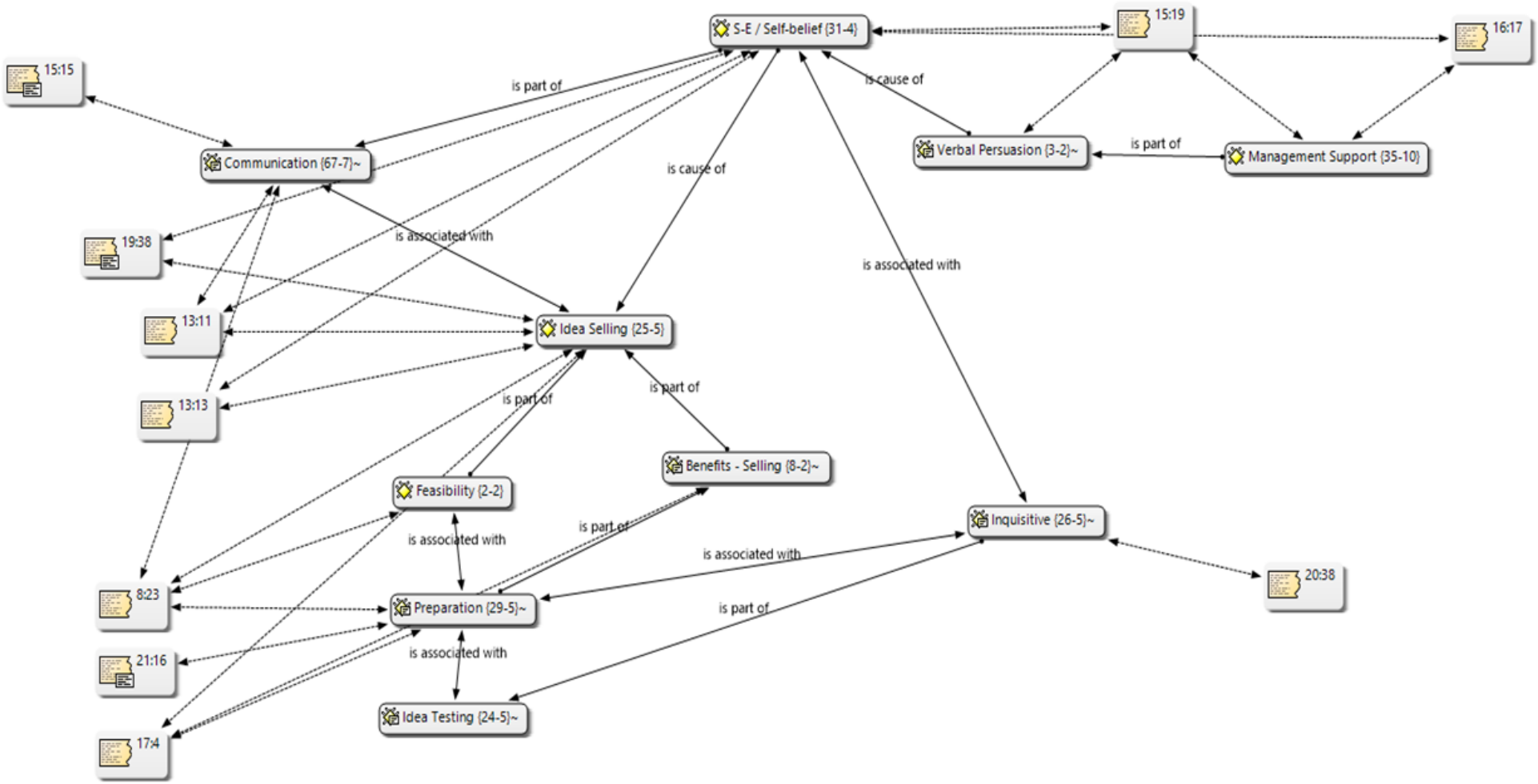


Figure B.1: Network diagram in Atlas.ti for self-efficacy

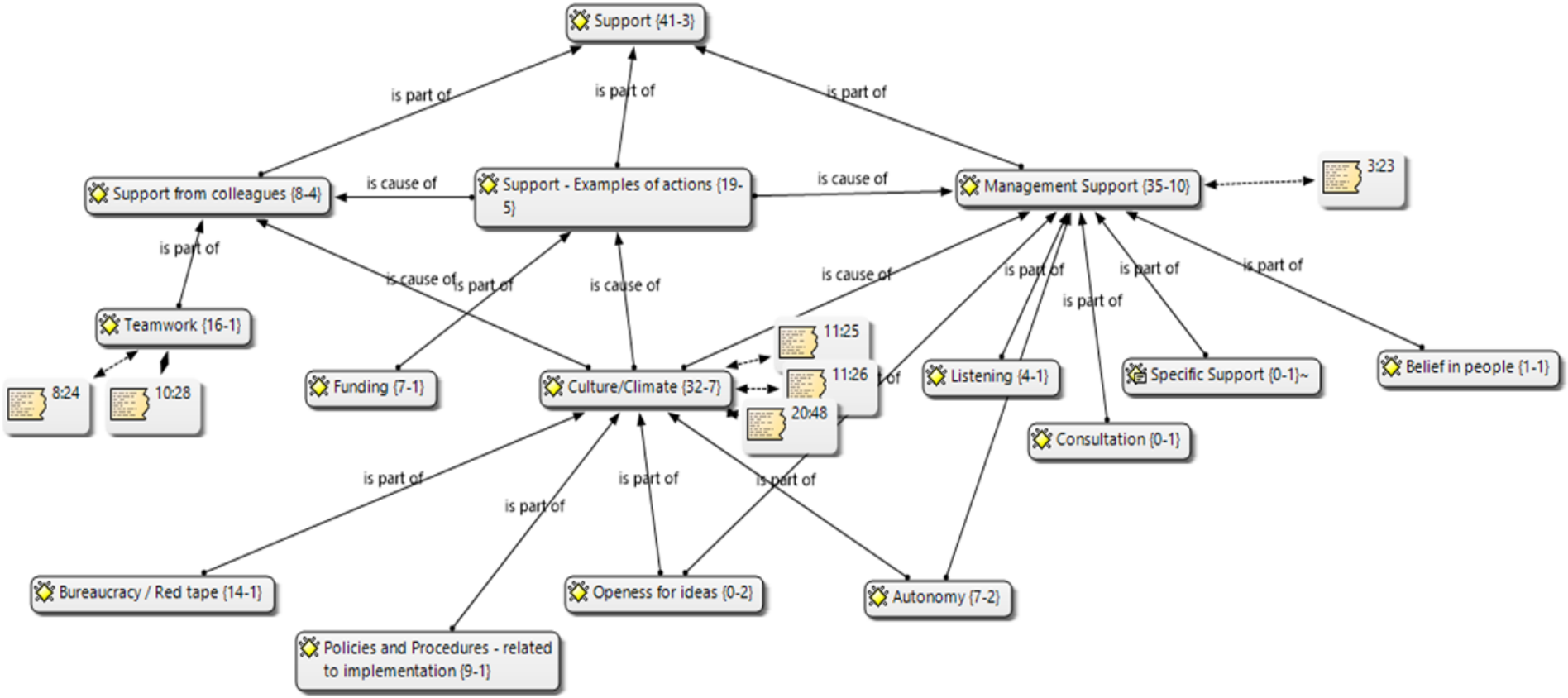


Figure B2: Network diagram in Atlas.ti for perceived organisational support

The purpose of the tables provided below is to demonstrate how the abstracted behaviours (left column) was related to the variables in the study by providing evidence in the form of the associated quotes (listed in the middle column).

Table B.1: Behaviours of Inquisitiveness related to interview quotes

Behaviour	Quotes	Reference in Atlas.ti
Investigating how things work	You see, I am that person if I am seeing something and something does not seem right there, I am like why is it wrong, why is it like that; or, how did that person come about doing something that he or she should not have done. I am always looking back, that is why I say I am curious. It sometimes gives you as a person also that insight as to why things are done the way they are.	15:26
	Yes, I am curious in the sense that, I obviously want to understand how something works but the curiosity is not only to understand how it works, it is normally what more can we do with it.	13:29
	Yes, if it interests me definitely I will try and dig deeper just to get an idea of how things work, definitely.	19:33
Experiment with ideas	So, when I got my first assignment as a branch manager, about six years ago, I decided that maybe this is one thing that I should start to experiment with.	11:3
	So, at first there were no goals. I wanted to see if all the theory that I have read actually was true. I mean, you read all these wonderful things. So, at first there were no goals but when we started to see the effect, well, the only goal was to just keep on doing it.	11:48
Enhance and simplify ideas/processes/“things”	So I am always looking for ways to enhance what we are busy with, also to streamline it to get a lot of efficiency, to maybe simplify things also as much as possible, because that often helps you to get complex things functionally working well by simplifying it.	13:25
In the habit of learning new things – learning mindset	I am somebody that reads a lot. I pick up the papers, I read a lot, I watch the news, I am always trying to look at the news to see what is happening within our society. So those were the things that really pushed me to do something different, not just for me as a person but for the company as well and also for the beneficiaries thereof.	19:34

Behaviour	Quotes	Reference in Atlas.ti
	And I stood back and made sure that I have the product knowledge, whenever I give an instruction or talk about something, to know what I am talking about. And that is how I go around and changed everyone's mind, and that is how I got successful.	3:24
	Definitely. I am always on the internet, I am always on Facebook, I am always in the market. I need information, because the basic about my things: the consumer must always have a choice. And you need to speak to your consumer: What is on their mind, what is speaking to them, what is making them tick, what is making that they will buy your brand or alternatively move over to your brand or buy more of your product, or a totally new consumer that comes to your brand.	20:37

Table B.2: Behaviours of Preparedness related to interview quotes

Behaviour	Quotes	Reference in Atlas.ti
Preparation before selling, pitching or implementing the idea	No, I just think you must be persistent and do your homework before you start with any project, otherwise you will waste a lot of money.	10:44
	But for me, once you do it once, you need to go down and look at it okay, let me move this and come up with a full plan, break it down. After you break it down and you put it on the table then you can see will it work, will it not work.	18:4
	My advice would be obviously you need to do your homework. Whenever you get the chance to actually voice your suggestion, you need to be able to show to your company or to your line manager what return on investment it is going to have for the company, can you prove it in terms of if there is the slightest idea of this can actually benefit the organisation, then you are going to have a hard time in actually getting people to listen to you or getting it to the right level of implementation, or if it is going to be considered at all. So you need to do your homework properly, you have to show the company, or whoever is first in line that you are voicing your ideas to, need to see what benefits are in for the company.	21:16
	I would say do not be afraid to talk about it, and you have to do your homework about it first before you come up with an idea.	5:12
	Do your homework. Do it properly. As I've said, we have done presentations so many times, you have to prepare yourself, and you must have that bit of confidence. As I've mentioned, do your homework and you must believe in yourself.	7:40

Table B.3: Behaviours of Communication related to interview quotes

Behaviour	Quotes	Reference in Atlas.ti
(1) Talk with other people (colleagues, customers, etc.) which leads to generation of ideas	Idea generation comes natural and it is with communicating, talking with different people in different places. That is how.	3:26
	… and when you think you are giving up on an idea or you think it is not going to work, then that one client walks in and starts going on about the problem that you have been hindering about.	6:18
(2) Share ideas and talk with other people – gain other insights and perspectives and develop ideas	And you start with an idea, you start talking with other people in your department about it, and then you get the bits and pieces and then you start building the idea.	10:33
	And that is why I love talking to people, then you get their means of doing, and sometimes it is easier than the way you are doing it. Even though we end up with the same, the file is complete, it might be that they save time while doing it on another method or way, and I would like to know about that.	15:29
(3) Solicit support for ideas	And I just made sure that in that next meeting that they understand the correlation between what they are doing, the small bit that they are doing what the effect is, and look what the effect there was. So that opened up a whole new world for the people …..	11:13
	People in the beginning, like I said, they do not like when you come in and you are the new person and you want to come do this and that and that. So I think the thing that stood out the most for me was talking to that person and understanding each other, so that we are on a point that we understand each other we are going to do this not for us but for our organisation, and to make our life easy at work so that you can come to work with a happy heart, and all that.	15:17
(4) Selling benefits of ideas	First of all, you must first sell it to your own seniors in your department, and you must sell the benefits to them, how will it make our work easier, our assessment easier.	10:9
	I think you must have all the benefits why you want to do it, then you must go sell it to the right people, and you must sell the benefits to the people.	10:36
	So, we have regular meetings on a weekly basis and what I did was I just explained the whole model of alignment to them and the benefits of it, so there was a bit of theoretical stuff there. And I just asked for their buy-in to see if it will work. And after I had explained everything they were all in.	11:21
(5) Testing ideas	We get together in a group, let us say there is an idea of a new sales strategy that they want to implement. Then we will speak about it a bit and if it seems viable to me I will just say you can go ahead and do it. And then after a week or two we will discuss the outcome.	11:52
	And we needed to rectify that. And maybe from our side we needed to come back and just to say listen, but we need to try this, just to be adamant and say listen, let us just try it and see how it works for a month or two.	18:20
(6) Talking with people to drive implementation	And then you must just keep pushing, and you must keep everybody involved and you must keep them interested in the project, otherwise if they lose interest then they tend to get too busy, there will always	10:43

Behaviour	Quotes	Reference in Atlas.ti
	be excuses. And excuses will always be there, so that is sometimes what make projects delay.	
	By doing this I sort of bring the positivity out of my team members, and I do not take achievement for myself. I involve them. I say it is our team. And whenever I try to implement something, I consult with my team members. I go back to them and talk to them, get their feelings, and I put it on the table. And from their ideas on the ground I bring it and forward it to the next level.	3:17
(7) Training users of the idea	I actually worked at his branch, so I helped him how to complete the form, I gave training in his branch with it, and later on with the training and the benefits it came out that it is the best way.	10:7
	And then try to explain and educate as far as possible why we are doing this, and why we are doing it like this, and why we have to have it in this timeline, and what the purpose of it is.	13:39
	It made a difference for myself as well, because I started believing in myself much more than I did when I know I can teach. A few years back I did not think that I will be in the position that I am now, but now I am so confident, I know the skills I have, the expertise I have I can pass on to other people and let them have the same satisfactory feeling that I have at this moment.	15:37
(8) Talking with people to manage change caused by the implementation of the idea	And then try to explain and educate as far as possible why we are doing this, and why we are doing it like this, and why we have to have it in this timeline, and what the purpose of it is.	13:39
	That person was my main concern. I said I am not here to bring in new structures and to make your life not nice, I am here to make your life easy, so this is what will happen. Do you like that? I was first trying to soften the person for the change that will come, and then only we started. And I said: Okay, so this is the old way, this is the new way, what do you think? Should we go with the old way, should we go with the new way?	15:12
	And all that I did is trying to bring up the positive, communicate to the guys, telling them the advantages that we have by doing this. It was very important, especially for the drivers to know that it is for them to ……. At the end of the day they realised what I was trying to do, and that is how we cooperate.	3:11

Table B.4: Behaviours of Active listening related to interview quotes

Behaviour	Quotes	Reference in Atlas.ti
Thinking about the idea and trying to understand it.	I listen to the idea, see if it makes sense, and then I would implement it across the board.	2:15
Put own opinions aside and be prepared to give the speaker a chance to explain.	So I think flexibility as well, and preparedness too, even if you are the project leader, if you are the one that is in charge, be prepared to listen to what others have to say.	8:27
Understand the idea to such an extent that they can explain it to others.	And like I said, on the manager level they must have somebody that actually okay, I hear your idea, let me take it up with management and let us see if we can get a proof of concept going, and let us do that, without like officially putting a project manager or anything on that, just somebody that takes the ideas and yes, let me talk to a few other people, it sounds like a good idea, let us get that process.	12:16
Show empathy when listening.	So, emotional support, the fact that I know I can simply go to him and tell him listen, I am now unhappy about this point, or whatever.	7:15

Table B.5: Behaviours of Managerial confidence related to interview quotes

Behaviour	Quotes	Reference in Atlas.ti
Believing in a person's capabilities in spite of the implementation being a major challenge involving risk.	We said we needed a new system, gave her some guidelines and said listen, let us go for it. And it is a major thing to actually put in a new system, and within, you know, I did the basic first research and said those are the systems you can have a look at, guided her. And she is, not a junior, well, she is to a certain extent junior and she has taken it. So I think the big thing is to believe in your people. If you believe it can become reality, it can, even if it does not work out what you anticipated it to be, and give structure to it.	9:44
Managerial confidence as a sign of support.	I think you really need self-confidence. Look, I did not have the whole financial background, but I knew I had the support, and that is what I needed to do what I wanted to do.	7:24
Displaying trust in the person by believing that they will be successful.	My manager was very, very supportive, and that made it a whole lot easier. And he had a lot of faith in me and to just let me, he said: Okay, this is your department, you know what is going on here. Come and inform me and say this is what I want to do and then I will give you my full support.	15:18
If the manager believes in a person, that person also believes in the other people who are involved in making the idea implementation a success. If the manager believes in a person, that person also believes in the manager (i.e. confidence works two ways).	Not with that one strategic move, there were others that we also had to put in place, but my manager was the reason why I believed also in myself, because he believed so much in me that I believed in myself as well. And I tried to give that persons working under me that same confidence, I wanted them to have that confidence in me and also in our manager as well	15:19

Table B.6: Behaviours of Consultation related to interview quotes

Behaviour	Quotes	Reference in Atlas.ti
Being involved. Asking questions. Take person's opinion into consideration. Challenging the person to come up with a solution. Joint decision making	My MD is always asking how far are you, he was always asking, he was involved. And whenever I came across something, an obstacle, always he has a way to do things. He is challenging you, always, to make use of your brains. And whenever you have a problem he asks you what is the solution. He does not give you the solution, he asks you for your opinion.	3:23
	And whenever I try to implement something, I consult with my team members. I go back to them and talk to them, get their feelings, and I put it on the table. And from their ideas on the ground I bring it and forward it to the next level.	3:17
Providing guidance, e.g. providing answers and giving advice. Joint decision making.	Where I noticed I could make a decision, I did so. But in general, anything except for the system that I felt unsure about, or when I felt my manager must know about it, even if it might not be very important, I would always first ask him what he thinks, or if it was purely financial then I just asked the financial manager.	7:21
Being involved. Asking questions. Joint decision making	We support this type of initiative, we brainstorm through these things, and I think advice was also given as to how best we can execute this type of event.	19:13
Asking questions. Being involved.	So, once you see an opportunity and you come with the facts, he normally asks for the facts, why you say this, he always has a lot of questions to ask, but fair questions, to see if it is going to work.	17:14
Being involved. Providing guidance.	I have regular discussions on this with him, and he is my sole motivator. He is the one that keeps me going with regard to these things. And the other thing, I mean, I can see that it works.	11:39

APPENDIX C:
VIGNETTES FOR THE DIFFERENT TREATMENT COMBINATIONS OF THE VARIABLES

For the treatment of the variables, a "0" denotes a low level for the variable, and a "1" denotes a high level for the variable. The opening scenario were the same for all the vignettes:

> "*There is a process in your work area which has been in place in the organisation for as long as you can remember. This process has a noteworthy impact on the outputs that your work area are responsible for. Something about the process has been bugging you for a while, because you have noticed some inefficiencies in the process. One day you come up with a useful idea on how to change this process, which will save your work area and the organisation some time and some money. After some preliminary investigation, you become aware that it will cost about N$ 200,000 to realise your idea.*
>
> *Knowing that your organisation values innovation and expects employees to come up with useful ideas, and being excited about your idea and the possible benefits it might bring, you decide to discuss your idea with your manager*".

The tables listed below denote the different vignettes depicting the different treatment combinations of the variables for the different experiments.

Table C.1: Vignette for Experiment 1

Exp #	Preparedness (P)	Active listening	Managerial confidence (MC)	Consultation (C)
1	0	0	0	0
Your manager agrees to hear you out, and asks you to come see him/her immediately. This leaves you with little time to prepare for your discussion with your manager to explain your idea to him/her. When meeting with your manager to discuss your idea, your manager looks very busy and while you are explaining your idea to him/her, he/she glances at his/her computer screen a couple of times, looks at his/her mobile phone a couple of times to answer a text message, and stares out the window occasionally. After discussing your idea with your manager, he/she replies that he/she really doubts if you would be able to implement your idea successfully, based on your abilities and experience. You then decide to first test out your idea, but as you start to put things in place, you run into a couple of unexpected issues. You decide to take it up with your manager. Your manager does not seem to care too much about the issues you mention and urges you to sort it out on your own and tells you to "go make a plan".				

Table C.2: Vignette for Experiment 2

Exp #	Preparedness (P)	Active listening	Managerial confidence (MC)	Consultation (C)
2	0	0	0	1

Your manager agrees to hear you out, and asks you to come see him/her immediately. This leaves you with little time to prepare for your discussion with your manager to explain your idea to him/her.

When meeting with your manager to discuss your idea, your manager looks very busy and while you are explaining your idea to him/her, he/she glances at his/her computer screen a couple of times, looks at his/her mobile phone a couple of times to answer a text message, and stares out the window occasionally.

After discussing your idea with your manager, he/she replies that he/she really doubts if you would be able to implement your idea successfully, based on your abilities and experience.

You then decide to first test out your idea, but as you start to put things in place, you run into a couple of unexpected issues. You decide to take it up with your manager.

Your manager gives you sound advice on all the issues you have mentioned, asks a couple of helpful questions and provides general direction on how to implement your idea.

Table C.3: Vignette for Experiment 3

Exp #	Preparedness (P)	Active listening	Managerial confidence (MC)	Consultation (C)
3	0	0	1	0

Your manager agrees to hear you out, and asks you to come see him/her immediately. This leaves you with little time to prepare for your discussion with your manager to explain your idea to him/her.

When meeting with your manager to discuss your idea, your manager looks very busy and while you are explaining your idea to him/her, he/she glances at his/her computer screen a couple of times, looks at his/her mobile phone a couple of times to answer a text message, and stares out the window occasionally.

After discussing your idea with your manager, he/she replies that he/she has total confidence in you that you will be able to implement your idea successfully, based on your abilities and experience.

You then decide to first test out your idea, but as you start to put things in place, you run into a couple of unexpected issues. You decide to take it up with your manager.

Your manager does not seem to care too much about the issues you mention and urges you to sort it out on your own and tells you to “go make a plan”.

Table C.4: Vignette for Experiment 4

Exp #	Preparedness (P)	Active listening	Managerial confidence (MC)	Consultation (C)
4	0	0	1	1

Your manager agrees to hear you out, and asks you to come see him/her immediately. This leaves you with little time to prepare for your discussion with your manager to explain your idea to him/her.

When meeting with your manager to discuss your idea, your manager looks very busy and while you are explaining your idea to him/her, he/she glances at his/her computer screen a couple of times, looks at his/her mobile phone a couple of times to answer a text message, and stares out the window occasionally.

After discussing your idea with your manager, he/she replies that he/she has total confidence in you that you will be able to implement your idea successfully, based on your abilities and experience.

You then decide to first test out your idea, but as you start to put things in place, you run into a couple of unexpected issues. You decide to take it up with your manager.

Your manager gives you sound advice on all the issues you have mentioned, asks a couple of helpful questions and provides general direction on how to implement your idea.

Table C.5: Vignette for Experiment 5

Exp #	Preparedness (P)	Active listening	Managerial confidence (MC)	Consultation (C)
5	0	1	0	0

Your manager agrees to hear you out, and asks you to come see him/her immediately. This leaves you with little time to prepare for your discussion with your manager to explain your idea to him/her.

When meeting with your manager to discuss your idea, your manager switches off his/her computer/mobile phone and actively and attentively pays attention to you while you are explaining your idea to him/her. He/she asks you a couple of detailed questions to clarify some matters, and nods his/her head a couple of times to indicate understanding.

After discussing your idea with your manager, he/she replies that he/she really doubts if you would be able to implement your idea successfully, based on your abilities and experience.

You then decide to first test out your idea, but as you start to put things in place, you run into a couple of unexpected issues. You decide to take it up with your manager.

Your manager does not seem to care too much about the issues you mention and urges you to sort it out on your own and tells you to “go make a plan”.

Table C.6: Vignette for Experiment 6

Exp #	Preparedness (P)	Active listening	Managerial confidence (MC)	Consultation (C)
6	0	1	0	1

Your manager agrees to hear you out, and asks you to come see him/her immediately. This leaves you with little time to prepare for your discussion with your manager to explain your idea to him/her.

When meeting with your manager to discuss your idea, your manager switches off his/her computer/mobile phone and actively and attentively pays attention to you while you are explaining your idea to him/her. He/she asks you a couple of detailed questions to clarify some matters, and nods his/her head a couple of times to indicate understanding.

After discussing your idea with your manager, he/she replies that he/she really doubts if you would be able to implement your idea successfully, based on your abilities and experience.

You then decide to first test out your idea, but as you start to put things in place, you run into a couple of unexpected issues. You decide to take it up with your manager.

Your manager gives you sound advice on all the issues you have mentioned, asks a couple of helpful questions and provides general direction on how to implement your idea.

Table C.7: Vignette for Experiment 7

Exp #	Preparedness (P)	Active listening	Managerial confidence (MC)	Consultation (C)
7	0	1	1	0

Your manager agrees to hear you out, and asks you to come see him/her immediately. This leaves you with little time to prepare for your discussion with your manager to explain your idea to him/her.

When meeting with your manager to discuss your idea, your manager switches off his/her computer/mobile phone and actively and attentively pays attention to you while you are explaining your idea to him/her. He/she asks you a couple of detailed questions to clarify some matters, and nods his/her head a couple of times to indicate understanding.

After discussing your idea with your manager, he/she replies that he/she has total confidence in you that you will be able to implement your idea successfully, based on your abilities and experience.

You then decide to first test out your idea, but as you start to put things in place, you run into a couple of unexpected issues. You decide to take it up with your manager.

Your manager does not seem to care too much about the issues you mention and urges you to sort it out on your own and tells you to “go make a plan”.

Table C.8: Vignette for Experiment 8

Exp #	Preparedness (P)	Active listening	Managerial confidence (MC)	Consultation (C)
8	0	1	1	1

Your manager agrees to hear you out, and asks you to come see him/her immediately. This leaves you with little time to prepare for your discussion with your manager to explain your idea to him/her.

When meeting with your manager to discuss your idea, your manager switches off his/her computer/mobile phone and actively and attentively pays attention to you while you are explaining your idea to him/her. He/she asks you a couple of detailed questions to clarify some matters, and nods his/her head a couple of times to indicate understanding.

After discussing your idea with your manager, he/she replies that he/she has total confidence in you that you will be able to implement your idea successfully, based on your abilities and experience.

You then decide to first test out your idea, but as you start to put things in place, you run into a couple of unexpected issues. You decide to take it up with your manager.

Your manager gives you sound advice on all the issues you have mentioned, asks a couple of helpful questions and provides general direction on how to implement your idea.

Table C.9: Vignette for Experiment 9

Exp #	Preparedness (P)	Active listening	Managerial confidence (MC)	Consultation (C)
9	1	0	0	0

Your manager agrees to hear you out, and gives you a week's time to prepare for your discussion. This gives you ample time to prepare for your discussion with your manager to explain your idea to him/her.

When meeting with your manager to discuss your idea, your manager looks very busy and while you are explaining your idea to him/her, he/she glances at his/her computer screen a couple of times, looks at his/her mobile phone a couple of times to answer a text message, and stares out the window occasionally.

After discussing your idea with your manager, he/she replies that he/she really doubts if you would be able to implement your idea successfully, based on your abilities and experience.

You then decide to first test out your idea, but as you start to put things in place, you run into a couple of unexpected issues. You decide to take it up with your manager.

Your manager does not seem to care too much about the issues you mention and urges you to sort it out on your own and tells you to "go make a plan".

Table C.10: Vignette for Experiment 10

Exp #	Preparedness (P)	Active listening	Managerial confidence (MC)	Consultation (C)
10	1	0	0	1

Your manager agrees to hear you out, and gives you a week's time to prepare for your discussion. This gives you ample time to prepare for your discussion with your manager to explain your idea to him/her.

When meeting with your manager to discuss your idea, your manager looks very busy and while you are explaining your idea to him/her, he/she glances at his/her computer screen a couple of times, looks at his/her mobile phone a couple of times to answer a text message, and stares out the window occasionally.

After discussing your idea with your manager, he/she replies that he/she really doubts if you would be able to implement your idea successfully, based on your abilities and experience.

You then decide to first test out your idea, but as you start to put things in place, you run into a couple of unexpected issues. You decide to take it up with your manager.

Your manager gives you sound advice on all the issues you have mentioned, asks a couple of helpful questions and provides general direction on how to implement your idea.

Table C.11: Vignette for Experiment 11

Exp #	Preparedness (P)	Active listening	Managerial confidence (MC)	Consultation (C)
11	1	0	1	0

Your manager agrees to hear you out, and gives you a week's time to prepare for your discussion. This gives you ample time to prepare for your discussion with your manager to explain your idea to him/her.

When meeting with your manager to discuss your idea, your manager looks very busy and while you are explaining your idea to him/her, he/she glances at his/her computer screen a couple of times, looks at his/her mobile phone a couple of times to answer a text message, and stares out the window occasionally.

After discussing your idea with your manager, he/she replies that he/she has total confidence in you that you will be able to implement your idea successfully, based on your abilities and experience.

You then decide to first test out your idea, but as you start to put things in place, you run into a couple of unexpected issues. You decide to take it up with your manager.

Your manager does not seem to care too much about the issues you mention and urges you to sort it out on your own and tells you to "go make a plan".

Table C.12: Vignette for Experiment 12

Exp #	Preparedness (P)	Active listening	Managerial confidence (MC)	Consultation (C)
12	1	0	1	1

Your manager agrees to hear you out, and gives you a week's time to prepare for your discussion. This gives you ample time to prepare for your discussion with your manager to explain your idea to him/her.

When meeting with your manager to discuss your idea, your manager looks very busy and while you are explaining your idea to him/her, he/she glances at his/her computer screen a couple of times, looks at his/her mobile phone a couple of times to answer a text message, and stares out the window occasionally.

After discussing your idea with your manager, he/she replies that he/she has total confidence in you that you will be able to implement your idea successfully, based on your abilities and experience.

You then decide to first test out your idea, but as you start to put things in place, you run into a couple of unexpected issues. You decide to take it up with your manager.

Your manager gives you sound advice on all the issues you have mentioned, asks a couple of helpful questions and provides general direction on how to implement your idea.

Table C.13: Vignette for Experiment 13

Exp #	Preparedness (P)	Active listening	Managerial confidence (MC)	Consultation (C)
13	1	1	0	0

Your manager agrees to hear you out, and gives you a week's time to prepare for your discussion. This gives you ample time to prepare for your discussion with your manager to explain your idea to him/her.

When meeting with your manager to discuss your idea, your manager switches off his/her computer/mobile phone and actively and attentively pays attention to you while you are explaining your idea to him/her. He/she asks you a couple of detailed questions to clarify some matters, and nods his/her head a couple of times to indicate understanding.

After discussing your idea with your manager, he/she replies that he/she really doubts if you would be able to implement your idea successfully, based on your abilities and experience.

You then decide to first test out your idea, but as you start to put things in place, you run into a couple of unexpected issues. You decide to take it up with your manager.

Your manager does not seem to care too much about the issues you mention and urges you to sort it out on your own and tells you to "go make a plan".

Table C.14: Vignette for Experiment 14

Exp #	Preparedness (P)	Active listening	Managerial confidence (MC)	Consultation (C)
14	1	1	0	1

Your manager agrees to hear you out, and gives you a week's time to prepare for your discussion. This gives you ample time to prepare for your discussion with your manager to explain your idea to him/her.

When meeting with your manager to discuss your idea, your manager switches off his/her computer/mobile phone and actively and attentively pays attention to you while you are explaining your idea to him/her. He/she asks you a couple of detailed questions to clarify some matters, and nods his/her head a couple of times to indicate understanding.

After discussing your idea with your manager, he/she replies that he/she really doubts if you would be able to implement your idea successfully, based on your abilities and experience.

You then decide to first test out your idea, but as you start to put things in place, you run into a couple of unexpected issues. You decide to take it up with your manager.

Your manager gives you sound advice on all the issues you have mentioned, asks a couple of helpful questions and provides general direction on how to implement your idea.

Table C.15: Vignette for Experiment 15

Exp #	Preparedness (P)	Active listening	Managerial confidence (MC)	Consultation (C)
15	1	1	1	0

Your manager agrees to hear you out, and gives you a week's time to prepare for your discussion. This gives you ample time to prepare for your discussion with your manager to explain your idea to him/her.

When meeting with your manager to discuss your idea, your manager switches off his/her computer/mobile phone and actively and attentively pays attention to you while you are explaining your idea to him/her. He/she asks you a couple of detailed questions to clarify some matters, and nods his/her head a couple of times to indicate understanding.

After discussing your idea with your manager, he/she replies that he/she has total confidence in you that you will be able to implement your idea successfully, based on your abilities and experience.

You then decide to first test out your idea, but as you start to put things in place, you run into a couple of unexpected issues. You decide to take it up with your manager.

Your manager does not seem to care too much about the issues you mention and urges you to sort it out on your own and tells you to "go make a plan".

Table C.16: Vignette for Experiment 16

Exp #	Preparedness (P)	Active listening	Managerial confidence (MC)	Consultation (C)
16	1	1	1	1

Your manager agrees to hear you out, and gives you a week's time to prepare for your discussion. This gives you ample time to prepare for your discussion with your manager to explain your idea to him/her.

When meeting with your manager to discuss your idea, your manager switches off his/her computer/mobile phone and actively and attentively pays attention to you while you are explaining your idea to him/her. He/she asks you a couple of detailed questions to clarify some matters, and nods his/her head a couple of times to indicate understanding.

After discussing your idea with your manager, he/she replies that he/she has total confidence in you that you will be able to implement your idea successfully, based on your abilities and experience.

You then decide to first test out your idea, but as you start to put things in place, you run into a couple of unexpected issues. You decide to take it up with your manager.

Your manager gives you sound advice on all the issues you have mentioned, asks a couple of helpful questions and provides general direction on how to implement your idea.

APPENDIX D:
EXAMPLE OF QUESTIONNAIRE

Below is an example of one of the questionnaires used for the purpose of this study. The example given is the questionnaire that was applied for Experiment 1, all variables at the low level.

1	1	1	0000	

Innovation Research Questionnaire

Please turn page

Please read the following scenario and then answer the questions that follow:

There is a process in your work area which has been in place in the organisation for as long as you can remember. This process has a noteworthy impact on the outputs that your work area are responsible for. Something about the process has been bugging you for a while, because you have noticed some inefficiencies in the process. One day you come up with a useful idea on how to change this process, which will save your work area and the organisation some time and some money. After some preliminary investigation, you become aware that it will cost about N$ 200,000 to realise your idea.

Knowing that your organisation values innovation and expects employees to come up with useful ideas, and being excited about your idea and the possible benefits it might bring, you decide to discuss your idea with your manager.

Your manager agrees to hear you out, and asks you to come see him/her immediately. This leaves you with little time to prepare for your discussion with your manager to explain your idea to him/her.

When meeting with your manager to discuss your idea, your manager looks very busy and while you are explaining your idea to him/her, he/she glances at his/her computer screen a couple of times, looks at his/her mobile phone a couple of times to answer a text message, and stares out the window occasionally.

After discussing your idea with your manager, he/she replies that he/she really doubts if you would be able to implement your idea successfully, based on your abilities and experience.

You then decide to first test out your idea, but as you start to put things in place, you run into a couple of unexpected issues. You decide to take it up with your manager.

Your manager does not seem to care too much about the issues you mention and urges you to sort it out on your own and tells you to “go make a plan”.

Please turn page

Based on the above scenario, please answer the following questions (use an "X" to indicate your answer):

How confident would you feel designing this new procedure for the work area:

DV1	Not confident at all	1	2	3	4	5	Very confident

How would you rate the chance of your idea being approved for future development:

DV2	Will not be approved	1	2	3	4	5	Will be approved

How would you rate the chance that affected employees will use the new process:

DV3	Employees will never use it	1	2	3	4	5	Employees will always use it

How would you rate the chance that affected employees will use the new process appropriately:

DV4	Will not use it appropriately	1	2	3	4	5	Will use it appropriately

Rate your degree of confidence to implement your idea:

DV5	Not confident at all	1	2	3	4	5	Very confident

Rate the chance out of a hundred that your idea will succeed:

DV6	0-20	21-40	41-60	61-80	81-100

Please answer the following demographical questions:

DE1. In which department do you work? [ ]

DE2. How long have you been working at this organisation? [ ] Years and [ ] months.

DE3. What is your level of education?

Up to Matric / Grade 12	Graduate Qualification	Postgraduate Qualification

DE4. What is your job grading? [ ]

DE5. What is your gender? [Male] [Female]

DE6. How old are you? [ ] Years.

Please turn page

When thinking about your everyday work environment, please rate whether you agree or disagree with the following statements (use an "X" to indicate your answer):

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
P1	My organisation really cares about my well-being.	1	2	3	4	5
P2	My organisation strongly considers my goals and values.	1	2	3	4	5
P3	My organisation cares about my opinions.	1	2	3	4	5
P4	Help is available from my organisation when I have a problem.	1	2	3	4	5
P5	My organisation would forgive an honest mistake on my part.	1	2	3	4	5

When thinking about <u>yourself</u> in the everyday working environment, please rate whether you agree or disagree with the following statements (use an "X" to indicate your answer):

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
S1	I feel competent to deal effectively with the real world.	1	2	3	4	5
S2	I can handle the situations that life brings.	1	2	3	4	5
S3	I am strong enough to overcome life's struggles.	1	2	3	4	5
S4	I usually feel I can handle the typical problems that come up in life.	1	2	3	4	5
S5	I feel that I have enough information to make good decisions.	1	2	3	4	5

When thinking about how you <u>communicate</u> in the everyday working environment, please rate whether you agree or disagree with the following statements (use an "X" to indicate your answer):

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
C1	I am able to produce messages that are not difficult for others to understand.	1	2	3	4	5
C2	I am able to produce messages that are not difficult for others to develop insight into their true meaning.	1	2	3	4	5
C3	When communicating to achieve a specific goal, I am able to accomplish my goal with a reasonable level of effort and resource investment.	1	2	3	4	5
C4	I have a feeling of accomplishment when I experience the successful outcomes involving a communicative episode or effort.	1	2	3	4	5
C5	Compared to the average, when I interact with other people through communication in a given social context, I view my interaction as competent and acceptable.	1	2	3	4	5

When thinking of your own <u>curiosity</u>, please rate whether you agree or disagree with the following statements (use an "X" to indicate your answer):

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I1	I am curious about both the practical and the theoretical aspects of a problem.	1	2	3	4	5
I2	I enjoy pondering and thinking.	1	2	3	4	5
I3	I am eager to learn.	1	2	3	4	5
I4	I keep thinking about a problem until I've solved it.	1	2	3	4	5
I5	I carry on seeking information until I am able to understand complex issues.	1	2	3	4	5

End of Questionnaire – Thank you for your participation.